

Higher Education Engagement with HEInnovate Self-Assessment Tool: A Case Study of Nine  
Austrian Higher Education Institutions

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## **Dedication**

To the memory of my loving grandmother, Khadija Ali Hassan Awad

## **Abstract**

This research investigates the process of carrying out self-assessment tools that support innovation and entrepreneurial activities in higher education institutions (HEIs), by looking specifically at a particular tool, HEInnovate, in the context of Austrian higher education. This comes at a time when both HEIs and the Austria government are emphasizing the importance of becoming more innovative and entrepreneurial in order to perform as an Innovation Leader in the European Innovation Scoreboard, and in recognition that innovation is key for productivity and economic growth, creating new and better jobs, enabling social mobility and is essential in responding to global and societal challenges (BKA et al. 2011).

Self-assessment tools in the area of innovation and entrepreneurship can provide inspiration and guidance to HEIs on how to capitalize on their strengths and address their weaknesses. HEInnovate has been used in that way in Europe and globally since its launch in 2013 (HEInnovate training package.; Gibb et al., 2015). It is gaining a growing acceptance as a growing number of HEIs are using it and have been providing positive feedback about it. However, there is scarce research done that looks at the process of using self-assessment tools in this nature (Ruskovaara, Pihkala, & Oy, 2016), and hardly any research done in the case of HEInnovate. This qualitative research aims to address this gap by doing a case study in nine Austrian HEIs and investigate their engagement with the HEInnovate self-assessment tool in the first half of 2018. The main research question is: how do HEIs engage with the HEInnovate self-assessment tool?

Key words: Self-assessment, HEInnovate, Higher education, Austria

## **1. Introduction**

This chapter provides an introduction for the thesis topic. It begins by briefly outlining the study context and research gap. It then numerates the main research questions that guide this study. It also mentions its potential contribution to the existing body of research as well as its contribution to different stakeholders. This chapter also gives a roadmap to the rest of the thesis body, and it ends with a note on possible conflict of interest, and how the researcher has resolved it.

### **1.1. Study Context and Research Gap**

Entrepreneurial education is spreading widely in higher education institutes around the world. This is evident by the increasing number of entrepreneurial programs in higher education, and the higher education institutions (HEIs) promise to support potential entrepreneurial programs (Nabi, Liñán, Fayolle, Krueger, & Walmsley, 2017; Pittaway & Edwards, 2012). This growth does not only spring from HEIs alone, but it has become governmental and societal demand, which is reflected in policy making and the expectations of stakeholders (COM, 2012; OECD, 2017a). In the EU, the 2010 revised Lisbon Strategy has a vision of making Europe more competitive, innovative, and raise the well-being of its citizens (European Commission, 2010). At the heart of this strategy is the idea of knowledge transfer which aims to reshape the primary role of HEIs by harnessing their education and research activities to shape, develop and innovate the whole society including the industrial sector (Sjoer, Nørgaard, & Goossens, 2016).

With this growth in entrepreneurial education, the European Commission has created number of initiatives to support and inspire innovation and entrepreneurship in higher education (Ruskovaara et al., 2016). Some of these initiatives involve developing self-assessment tools to assist HEIs in their attempts to measure these activities against international standards (ibid.). The self-assessment tools that have emerged from these initiatives are quite diverse in their methods, target audiences, and their goals. However, they do have some commonalities like their aim to be disseminated widely across multiple regions, and their availability on online platforms using web browsers, and sometimes, mobile applications (ibid.). This raises the access to such tools and facilitates their dissemination to a large number of people. However, there is little documentation and empirical research done on how HEIs use self-assessment tools in the area of innovation and entrepreneurship in higher education (Pittaway & Cope, 2007; Pittaway & Edwards, 2012; Ruskovaara, Pihkala, Seikkula-Leino, & Rytikölä, 2015; Ruskovaara et al., 2016). The method HEIs engage with self-assessment tools is an important variable that can have heavy influence on the process of institutional learning and development (Arzeni & Tyson, 2018; Hides, Davies, & Jackson, 2004a; José Tarí & de Juana-Espinosa, 2007a; José Tarí, 2010a; Kasperaviciute, 2013). Therefore, more research in this area needs to be done (ibid.), and it is the gap that this research aims to address.

This study focuses on the HEInnovate self-assessment tool in particular. It is a tool that was initiated by the European Commission and the OECD (Gibb, Hofer, & Klofsten, 2015). It measures



not only the pedagogical aspect of entrepreneurial education, but also the institutional side of it, including students' and external stakeholders point of views. This tool started to be available for individuals and HEIs to use in 2013, and it has been used by many HEIs from different countries in Europe, and globally (COVA & Solcan, 2018; OECD, 2017b; Papa & Demo, 2018; Sultan, 2017). The tool is available online and for free for individuals and institutions. It is user intuitive, and it takes individuals a few minutes to learn about it and start the process of self-assessment almost immediately. The website does not provide instructions for HEIs on how to use the tool as an institution, which provides high flexibility and freedom for HEIs. However, the website highly encourages using workshops in the process of implementing the tool, and they provide detailed guidelines on different types of workshops and activities to do so. It is noted that there are no studies that observe how HEIs engage with the HEInnovate self-assessment tool.

## **1.2. Research Purpose and Questions**

This research attempts to address this gap by doing a case study of nine Austrian HEIs who have engaged with the HEInnovate self-assessment tool in the first half of 2018. All these HEIs have participated in an HEInnovate country review, hence their engagement with the assessment tool. This case study is done in the form of semi-structured interviews with individuals within HEIs who are responsible for leading the process of completing the self-assessment within their organizations. The general research question guiding the study is:

How do HEIs engage with the HEInnovate self-assessment tool?

Under this main question, four sub-questions are addressed:

1. What are the steps HEIs take to understand, and complete the self-assessment tool?
2. What are the motivations of HEIs to engage with the self-assessment?
3. What are the roles the individuals responsible for leading the process of completing the self-assessment in an HEI? How and why are these individuals selected?
4. How do different methods of engagement with the self-assessment tool affect the outcome and perceived value of it?

The author has developed a conceptual framework that helps addressing these questions by looking at the framework of Project Life Cycle (Labuschagne & Brent, 2005; Pinto & Prescott, 1988), and other detailed processes for implementing self-assessments in the area of quality management in higher education.

## **1.3. Contribution of the Research**

As stated in this chapter, there is lack of research made to explore and analysis the process of which HEIs use self-assessment tools in the area of entrepreneurship and innovation in general, and hardly any research done in this area for the HEInnovate self-assessment tool. It can be of great value to know and understand what happens “on the ground.” This would allow better understanding on how certain practices affect the outcome and impact of engaging with such assessment tools. Thus, this study intends to contribute to the body of research in the area of

innovation and entrepreneurship assessment of higher education by focusing on HEInnovate self-assessment in the context of Austria's higher education.

The contribution of this study comes in two folds: theoretical and practical. Theoretically speaking, this study aims to explore potential challenges that are faced by HEIs when they use the self-assessment tools. Practically speaking, this research contributes to the application of self-assessment by exposing practices that either weaken or strengthen the effective usage of HEInnovate self-assessment tool. This comes at a time when HEInnovate is gaining wider acceptance and is being used by an increasing number of HEIs in Europe and globally. Additionally, this comes at a time when governments are considering using HEInnovate as a guiding framework for drafting proposal agreements.

The scope of this research focuses solely on the process of completing the HEInnovate self-assessment in higher education and immediate effects but does not explore the impact of such an assessment on the long term. The reason for this lies in the fact that the impact of an assessment on an HEI takes a much longer time than the window of time this study allows.

The target audience of this thesis are HEI leaders who engage with organizational self-assessment tools in the area of innovation and entrepreneurship, and different individuals within an HEI who consider using such tools. Additionally, experts designing these self-assessment tools for HEIs can gain insight from this research which would aid them in their design and decision making. The thesis can also give useful insights for policy makers who are considering using the HEInnovate framework in performance agreement with HEIs, and researchers who use the HEInnovate framework in their studies of HEIs' innovation and entrepreneurship capacity.

#### **1.4. Structure of the Study**

The thesis is organized in six chapters. This chapter presents the research context, gap, questions and contribution to the existing body of literature. It also describes the organization of the rest of this study. Chapter two presents a literature review in the area of self-assessment tools in the area of innovation and entrepreneurship in higher education. It highlights how they started to emerge, and their different purposes and processes. A large part of this chapter is dedicated for the HEInnovate self-assessment tool, and includes research done using the tool's framework. The purpose of this chapter is to outline what has been studied in this area and give more details on the existing research gap. Chapter 3 is dedicated for the conceptual framework. It starts by looking at the Project Life Cycle analytical framework, then moves to looking at existing self-assessment processes in the area of quality management in higher education. From there, the author outlines the framework basing it on the Project Management Life Cycle and the literature reviewed on self-assessment processes in the area of quality management in higher education. This conceptual framework is used to guide the study's research questions, and analysis. Chapter four presents the research method, where the researcher outlines the steps taken to conduct the study. Chapter five is dedicated for presenting research findings and answers the research questions. It starts by giving

detailed context of the HEInnovate country review in Austria. It also includes the views of two institutions that refused to use the HEInnovate self-assessment tool. Chapter six summarizes research findings, provides a conclusion, and poses research questions for future research.

### **1.5. Conflict of Interest**

The researcher has participated in the country review by taking up the position of junior researcher with the OECD team of experts visiting Austrian HEIs. This involvement lasted for two weeks in June. The role of the researcher was to visit HEIs with the team of experts and take down notes on the discussions taking place. These notes are used by the OECD to give feedback for HEIs, and also writing the final country report. The researcher's participation in the HEIs visits has facilitated this study by providing easy identification of the persons involved in the process of leading the self-assessment completion in their institutions and resulted in high participation rate from HEIs in this study. However, the idea of this research was conceived before the author learned about the opportunity to participate in the country review. Moreover, this thesis is done independent from the OECD to help ensure an unbiased analysis of the results. These facts were discussed extensively with all the study participant to make it clear that this research is not funded by the OECD and is independent from it. Thus, by taking these steps, the author eliminated conflict of interest in conducting this research.

## **2. Literature Review**

This chapter will attempt to give an over view of the literature in the area of self-assessment tools that focus on entrepreneurial education in higher education. It starts by describing the beginning of developing entrepreneurial education and the motivation of different players behind this move. The review then moves to self-assessment tools and the story behind their emergence, growth and their purposes. Afterwards, examples of self-assessment tools in the area of entrepreneurship education are described, with much focus given to HEInnovate self-assessment tool because it is the focus of this study. Finally, it looks at some self-assessment processes in the area of quality management in higher education. The literature review concludes with a brief summary that highlights the existing research gap that this research attempts to address.

### **2.1. Entrepreneurship in Higher Education Institutes**

The concept of entrepreneurial universities, and entrepreneurship in education started to become a topic of interest in the 1990s. This is motivated by the desire to have stronger links with society and the industry and have more effective ways of disseminating science and knowledge to practical usage. Research has shown that higher education institutes (HEIs) influence the efficiency of industrial innovation when they focus on such activities (Hou, Hong, Wang, & Zhou, 2018). This can be achieved when HEIs engage in activities outside their two main core missions which are teaching and research and focus on other activities such as knowledge transfer and commercialization of research. These activities fall under what is known as “third mission”(Lambert, 2003; Secundo, Perez, Martinaitis, & Leitner, 2017). There is no general definition of third mission (Secundo et al., 2017), but it is agreed that it comprises of three main dimensions: technology transfer and innovation, continuing education, and social engagement (E3M, 2010). The phrase “entrepreneurial university” emerged to describe HEIs that focus on third mission besides their traditional missions of teaching and research (Clark, 1998).

Numerous universities globally started offering and developing entrepreneurship courses and programs (Fox, Pittaway, & Uzuegbunam, 2018; Wenninger, 2018). However, that is only one part of becoming more entrepreneurial as institutions. The expectations that society has from HEIs has transformed and HEIs are expected not only to cope with the rapidly changing needs of society, but also become an agent for its change (Myryläinen, 2017). This is seen in the way national and regional policies of many countries are currently focusing on this particular role of HEIs. The European Commission has listed a set of recommendations for member states in order to position their higher education system. These recommendations aim to have HEIs contribute directly and indirectly to economic activity by providing training and education for skills development that act as a foundation for boosting growth, competitiveness, and in the long run, innovation (COM, 2012). The European Commission goes further by defining the mission of education and training by:

*“The broad mission of education and training encompasses objectives such as active citizenship, personal development and well-being. While these go hand-in-hand with the need to upgrade skills for employability, against the backdrop of sluggish economic growth and a shrinking workforce due to demographic ageing, the most pressing challenges for Member States are to address the needs of the economy and focus on solutions to tackle fast-rising youth unemployment.”*

However, in their renewed EU agenda for higher education (2017), the European Commission observes that higher education institutes are not contributing in a satisfactory level to innovation in the wider economy and to the region, and that their performance varies considerably between different EU regions (European Commission, 2017). In a reply for the renewed EU agenda for higher education, the EUA adds that universities have a key role in regional innovation ecosystems, and it goes beyond market production. It is not only limited to research effective dissemination in society, but also includes innovation in education, culture, and social welfare (EUA, 2017).

As a result of the recognition of the role of higher education in shaping an innovative and entrepreneurial society, many steps have been taken to support, inspire, and guide HEIs to become more innovative and entrepreneurial. This includes giving HEIs managerial autonomy while increasing accountability (Parker, 2011; Secundo et al., 2017). Performance agreements are used as a tool that encourages HEIs to set innovation and entrepreneurship as one of their core elements (European Commission, 2017; Jonkers, Tijssen, Karvounaraki, & Goenaga, 2017). These performance agreements and measurements assist HEIs to improve quality, management and reporting systems (Paloma Sánchez, Elena, & Castrillo, 2009).

However, performance agreements alone are not sufficient to move HEIs to become more innovative. EUA (2017) points out:

*“In the past, EUA has already warned against excessive expectations towards performance based funding. While it may increase overall transparency and accountability, it requires full clarity and a global vision as to the objectives pursued by the system. EUA recommends that discussions in this area are held to continue building on this existing evidence, bearing in mind that enabling, rather than restricting regulatory frameworks is the key to the capacity of institutions to profile themselves strategically, and to achieve the objectives [related to enhancing education, benefitting labor market, and contributing widely to society].”*

Additionally, research highlights the limitations of performance agreements as a mean to measure entrepreneurship activities in higher education, and third mission. Even though performance agreements have metric measurements for third mission, there aren't any comprehensive ones that cover both the management aspect of an HEI and reporting it (Secundo

et al., 2017). Another issue with performance agreements is while they show the output of HEIs activities, there aren't cohesive methodology that captures what actions HEIs actually take to have their results (Montesinos, Carot, Martinez, & Mora, 2008). The reason for that can be attributed to the wide variety of activities that encompasses third mission, as oppose to teaching and research that are clearly conceptualized (ibid.).

In this light, self-assessments can play a role to aid HEIs to become more innovative. They can help understand what is working in entrepreneur education, and why (Pittaway & Cope, 2007). They tend to be formative tools with an aim of diagnosing the state of entrepreneurship and inspire HEIs with new ideas on how to utilize strengths, address challenges, and take advantage of opportunities. Moreover, a Eurydice report highlights that self-assessment tools can be particularly useful in addressing the need for setting targets for entrepreneurship education, and continuously monitor and follow up on systems for entrepreneurship education (European Commission/EACEA/Eurydice, 2016).

## **2.2. Self-Assessment in Higher Education**

The need for assessing entrepreneurial activities and entrepreneurial education in HEIs is high. As mentioned above, programs and activities emerging to make education and HEIs entrepreneurial and have stronger links with society and industry have resulted in the immergence of numerous programs and initiatives in HEIs around the world to address this need. Pittaway and Cope (2007) point out that with the with the vibrance and diversity of enterprise and entrepreneurship education that have appeared, a pressing need to move from a period of growth into a period of reflection is necessary. This step is crucial to reflect and understand more carefully what has been working and why. This type of assessment would lead to moving and acting more strategically in the area of entrepreneurship in education and in higher education (Pittaway & Cope, 2007).

Much of the research in the area of assessing entrepreneurial education and higher education focus on the pedagogical aspect of it (Nabi et al., 2017). In their systematic review on research in the area of impact of entrepreneurial education in higher education, Nabi et al. (2017) highlight the research trends in this field, and their limitations. They have observed that much of the research focus on short-term effects and subjective measurements of the impact of entrepreneurial education. For example, there is more focus on the attitudes and intentions of learners, rather than long term impact of entrepreneurial education such as venture creation behavior and business performance. Another observation is that there is little research done that investigates the outcomes of using specific pedagogical methods (ex. Exploration, discussion, or experimentation). However, the number of studies focusing on evaluation and assessment practices in this field are limited (Pittaway & Cope, 2007; Pittaway & Edwards, 2012; Ruskovaara et al., 2016).

In an attempt to answer the question of “what works, and why” in entrepreneurship education, there has been studies that highlighted the contextual factors of HEIs. These factors exist within

the environment of an HEI and affects institution's capability and approach towards entrepreneurship. Pittaway and Cope (2007) describe this as "university enterprise context." This includes infrastructure, supply of faculty, institution's communication policies, academic enterprise, outreach activities, and management development activities (Clark, 1998; Pittaway & Cope, 2007). These factors possibly have indirect bearing on an HEI's approach to entrepreneurship education or can give an indirect input into entrepreneurship education (ibid.).

It is worth noting that the influence of entrepreneurship education on the intent of students, researchers and graduates to engage in entrepreneurship activities is a complex area to study and map, because HEIs are not the only influential player affecting the outcome and impact of such mode of education. While HEIs can address some factors that influence students' attitudes towards self-employment and entrepreneurship such as providing support for entrepreneurial activities (Lüthje & Franke, 2003); and provide sufficient business knowledge across faculties within an HEIs (Oakey, Mukhtar, & Kipling, 2002; Wang & Wong, 2004), other factors are more challenging for HEIs alone to address. This includes the influence of students' personality traits towards attitude of self-employment (Lüthje & Franke, 2003); gender and family previous experience of entrepreneurship direct impact on students' intention (Wang & Wong, 2004); and the wider cultural and political economic context surrounding students (Klapper, 2004). All the above makes the act of assessing effectiveness of entrepreneurial higher education a complex endeavor.

### **2.3. Self-Assessment Tools for Innovative Education**

The past two decades has seen an increase in the number of self-assessment tools designed to evaluate entrepreneurship in education and in higher education (Ruskovaara et al., 2016). In the European scene, numerous initiatives appeared in order to unify and strategize national efforts of offering entrepreneurial education (Badulescu, Perticas, Hatos, & Csintalan, 2018), so HEIs would be aware of how their work stand in the European context, especially in terms of policies, rather than thinking within the framework of individual separate projects (COM, 2012). A considerable number of these initiatives came in the form of assessment tools that focus on curriculum design and teaching and learning. Thus, they mostly target students and educators, and can engage leadership, but in an indirect way. However, there are several tools that extend their evaluation to include employability as one of their dimensions, engage additional target groups directly such as leadership and the whole educational institution, and are designed in such a way so they can be implemented internationally rather than focus on a specific course or program inside an educational institution. One of these tools is HEInnovate, which is going to be elaborated on later in this chapter. Some examples of other tools of this nature are:

- **Entre Intention:** is a self-assessment tool in the form of a survey for HEI students to identify their entrepreneurial intentions and attitude. It aims to measure the impact of entrepreneurial education on learners and provides insight for educators who develop

curriculums related to entrepreneurship. It is also an informative tool for policy makers to show the link between entrepreneurial education and learners' intention to engage with entrepreneurship. The tool was developed in Seinäjoki University of Applied Sciences (SeAMK) in Finland and launched in 2008. It is currently available in 5 languages and has been used in six countries (EE-HUB).

- Global Entrepreneurship Monitor (GEM): is an international research undertaking to study entrepreneurship globally. The data collected for this research is mainly in the form of a survey targeted to researchers, academics, policy makers and civil servants. It aims to identify entrepreneurial behavior and attitudes of individuals; and understand the national context of the country studied, and how it impacts entrepreneurship. GEM began in 1999 as a project between Babson College (USA) and London Business School (UK). Their data includes more than 100 economies. This data is used by academia, policy makers, by the press as an international reference, and it has also been used as a teaching tool. Their survey has been translated to many languages to accommodate its global use (GEM Global Entrepreneurship Monitor).
- Measurement Tool for Entrepreneurship Education (MTEE): is a web-based self-assessment tool for teachers and educators working in different school levels, universities and universities of applied sciences, and also for student teachers who are studying in universities or universities of applied sciences. It aims to support and guide teachers, educators, principals, and decision makers to provide entrepreneurial/ enterprise education. This tool consists of different measuring tools tailored for each of the target groups mentioned above. The main developer of these tools is Lappeenranta University of Technology (LUT) in Finland. They have been developed through different projects since 2008 and was completed in 2012. It has several partners that include Finnish municipalities, national authorities, teachers and educational organizations from around Europe. The tool is widely used in Finland and has been used in more than 25 countries in Europe. It is available in English, Finnish and Swedish (Ruskovaara et al., 2016).
- OctoSkills: is a self-assessment in the form of a questionnaire on a mobile application. The assessment is completed by primary, secondary and tertiary students, and it is intended to inform teachers and practitioners on students' entrepreneurial self-efficacy development, and whether education changes students' entrepreneurial attitudes and entrepreneurial intentions. The tool launched in the autumn of 2015 and is owned by the Danish Foundation for Entrepreneurship. Some parts of the tool have been translated to 12 languages. It has been used by students in Denmark, Luxemburg, Australia, Portugal and Slovenia (EE-HUB).



The few examples mentioned above are just a small sample of many other tools designed to measure entrepreneurship in the field of education. They reveal the variety of ways, perspectives and frameworks that are used to measure entrepreneurship in education. Moreover, it is notable that the stakeholders and the audience for each tool is different, as well as the aims of each evaluation. This further affirms that there are many elements that affect entrepreneurial education, and that measuring it can become a challenge. An element that many of these tools share is that they come in the form of a survey or a questionnaire that are available online or via a mobile application. HEInnovate is not an exception.

Given the wide variety of self-assessment tools dedicated for topics of innovation and entrepreneurship in higher education, it is natural that the processes of using these assessment tools would vary considerably. Some tools combine diverse data collection techniques alongside their questionnaires. For example, GEM performs a limited number of interviews for each case to gather qualitative data, but the largest bulk of their data comes two surveys they conduct: one aimed for a country's adult population aged between 18 and 64; and another is a survey aimed at "national experts" in the field (Herrington, Kew, Kew, & Monitor, 2010). In the case of GEM, HEIs are not directly responsible for collecting this data. In the case of the MTEE, the self-assessment is mainly directed to teachers and educators. It is implemented during a study course, and is distributed to students to learn what methods of teaching teachers take is more effective to convey learning materials (Ruskovaara et al., 2015; Ruskovaara et al., 2016). Detailed process of its implementation is not outlined in the literature or their website. This is also the case with OctoSkills which measures students' attitudes towards entrepreneurship by taking the self-assessment multiple times during the course of their studies. Other self-assessments in this area generally have the same gap: the detailed process of implementing them is rarely studied, documented or observed. This leaves a gap of understanding how these tools move from theoretical frameworks to their implementation and usage in real-life cases.

## **2.4. HEInnovate Self-Assessment Tool**

### **2.4.1. Background and description of HEInnovate**

The HEInnovate is a self-assessment tool for higher education institutes that was initiated by the European Commission's DG Education and Culture and developed in partnership with the OECD Local Economic and Employment Development Program. This concept was first discussed in 2011 at the University-Business Forum (HEInnovate training package.; Gibb et al., 2015) . It comes from the need to define and identify the concepts and characteristics of entrepreneurial HEIs. It was launched two years later in 2013, as a free self-assessment tool that can be used for all types of higher education (Universities, University Colleges, Polytechnics, etc.) to help explore their existing level of innovativeness and entrepreneurialism. This allows them to assess their readiness to engage in intrapreneurial activities (Henry, 2015). It recognizes the uniqueness of

every HEI, and aims to help them build on what they already have, rather than become a benchmarking tool for measuring innovation or entrepreneurship per se (HEInnovate training package.; Gibb et al., 2015; Myyryläinen, 2017). The tool’s ultimate function is to provide advice, ideas and inspiration for effective management of HEI instructions and cultural change (Arzeni & Tyson, 2018).

HEInnovate tool allows anyone to assess their HEI by rating different statements that measure an HEI entrepreneurial activities in different areas, including leadership, staffing and links with business. At the time this research is conducted, HEInnovate consisted of seven core dimensions in which innovative and entrepreneurial activities in HEIs fall into. An eighth dimension was added in May 2018, which is headed “Digital Transformation and Capabilities” (HEInnovate training package.). However, this thesis study will overlook this dimension in its review and analysis because universities in this study that completed the self-assessment have done so before this new dimension was added. The seven dimensions come in the form of 45 questions, or rather statements, in which an assessor shows the extent of which they consider the statement applicable to their institution. The answer is provided on a Likert scale, where “1” is the lowest rating, and “5” is the highest. The assessor can also select an “N/A” option when a statement is “not applicable” to their institution.

The self-assessment is available online on the HEInnovate website<sup>1</sup> and it is open and free of charge. There are no restrictions as to who takes it and for what purpose. Therefore, an individual, a group, or an entire institution can engage with the self-assessment. This liberty is intentional to make the tool flexible enough so HEIs would be the ones deciding how to best utilize the tool, including deciding their own goals from completing the assessment, and selecting the people that are going to engage with it.

The assessment can be completed on multiple sittings, with options of saving responses, and editing responses available. Feedback is instantaneous, and assessors have the option of choosing to answer specific core areas and leaving out others, and they would still receive feedback on the areas they have selected. The feedback includes bar charts and spider graphs that provide an overview summary of where an HEI stands in respect to each area. The table below provide a summary of the seven core dimensions and the number of questions covering each.

Dimension	Purpose of dimension	#Questions
1. Leadership and Governance	This area attempts to identify strong leadership and good governance and assesses the presence of and commitment to entrepreneurship in an HEI’s strategy, mission and vision.	5

<sup>1</sup> HEInnovate website can be found at: <http://heinnovate.eu/>

2. Organizational Capacity: Funding People and Incentives	This area focuses on instruments in place to support entrepreneurial activities. This includes looking at financial strategies, recruitment policies, staff development, and incentive reward systems. It attempts to identify institutional barriers that hinder entrepreneurship in higher education.	7
3. Entrepreneurial Teaching and Learning	This area assesses HEI activities that raise awareness and encourage students, graduates, and staff members to become entrepreneurial. It also enquires about the extent HEIs support these groups to turn their ideas to reality by starting, running, or growing a business.	6
4. Preparing and Supporting Entrepreneurs	This area assesses the level of evaluator's knowledge of how their institution raises awareness of the value of entrepreneurship, and stimulates the entrepreneurial intentions of students, graduates, and staff members to start-up businesses. It also takes into consideration the HEI support to moving ideas from the process of generating them to business creation through offering training and personal development by experienced individuals from academia or the industry.	11
5. Knowledge Exchange and Collaboration	This area examines whether an HEI is actively involved with a wide range of stakeholders. It emphasizes links with incubators, science parks, and other external initiatives. It also assesses the level of which an HEI mixes research, education and the industry or society to apply and exploit new knowledge.	6
6. The Internationalized Institution	It examines HEI's links with the international surrounding and how these links influence its activities.	5
7. Measuring Impact	This area examines HEI's assessment mechanisms in place that assess entrepreneurial activities effectiveness. For example, the helpfulness of their start-up support, or their regular trainings	5

*Table 1: The 7 core dimensions of HEInnovate Framework*

As mentioned above, HEInnovate self-assessment tool allows either a single individual to do the whole exercise, or for a group of people to complete it according to their areas of expertise. The group function is the best way for HEIs to instigate institutional change. Using this function, a group administrator can invite an unlimited number of people to participate, who can be from both inside and outside the institution. On both levels, this tool allows evaluation to happen on the institutional level by highlighting an HEI member's experience of their current situation. The availability of this free tool, which doesn't rank or provide benchmarks for HEIs, provides leadership with an opportunity to reflect on their activities and strategies including research and social impact. Thus, it can be a learning tool providing opportunities for HEIs to define where they are in terms of their entrepreneurial potential and where they can position themselves in the future.

#### **2.4.2. HEInnovate country reviews**

As a way to promote the concept of innovative and entrepreneurial HEIs in Europe, and globally, the OECD has been doing HEInnovate country reviews since the tool was first launched in 2013. Thus far, five country review reports have been published for the countries of Bulgaria, Poland, Ireland, Hungary and the Netherlands (Hofer & Dimitrov, 2015; OECD, 2017; OECD, 2017; OECD, 2018; OECD Publishing, 2017). There are three main objectives of these reviews. First, they aid policy makers and HEI leaders to identify existing opportunities and act upon them, as well as recognizing general challenges to help and support entrepreneurial and innovative HEIs. Second, learn and analyze good practices in both public policies and HEIs actions. Third, share findings to promote international collaborations.

For each of the reviews, a group of selected experts in different areas in higher education innovation and entrepreneurship visit universities that have decided to take part of the country review. They also meet with relevant stakeholders such as people from the industry, the chamber of commerce, and the ministry of education. The group of experts identify good practices, opportunities, challenges and barriers for HEIs visited. The reviews are conducted under the HEInnovate framework. HEIs participating in the country review are strongly encouraged to complete the HEInnovate self-assessment prior to the experts visit as a mean of preparation. After the visits, the group of experts provide feedback for each of the HEI visited about their good practices, and suggestions to move forward. This feedback is not available publicly and is only exclusive to each HEI. Another output from the country review is a country review report that shares strength points and good practices to be available as a resource for policy makers and HEI leaders internationally as a source of ideas and inspiration for changing towards having more innovative and entrepreneurial HEIs.

In 2018 Austria participated in such a country review. A total of eleven HEIs around the country were visited by the group of experts. The process started in January with a collaboration between the European Commission, the OECD, and the Federal Ministry of Education, Science

and Research in Austria (BMBWF). Austrian HEIs were invited to participate in the country review, and they did so voluntarily. More details on this specific country review will be provided in the “Context of Study” section as it lays the ground for this study.

### **2.4.3. Process of completing the HEInnovate self-assessment**

The HEInnovate gives a guide on how to use the tool as an individual, or in a group using the group function. Starting the process is easy. The website gives a short guide in the form of two videos: one video is on how to use the HEInnovate website, and the other video is specifically for using the group functions<sup>2</sup>. Each video is about five minutes long and provide thorough explanation on how to get started. From there, users can start the self-assessment immediately, and complete it in less than an hour.

Nevertheless, the HEInnovate website also provides a workshop guide in a document of over 60 pages (Arzeni & Tyson, 2018). The purpose of the workshops described in the guide is to aid HEIs to make the best use of the self-assessment tool. Arzeni and Tyson (2018) indicate that the tool is best utilized when it is used as part of a process rather than used isolated. The guide doesn't describe any specific process, but it suggests that workshops are an important part of it.

The manual describes in detail three types of workshops that an HEI can implement as part of the process of completing the self-assessment, providing worksheets, handouts, activities suggestions, time-tables, and workshops aims and goals. Each workshop takes either a full day or half a day depending on the activities facilitators choose to include. The intended audience can include people from different levels inside and HEI, students, and/or external stakeholders. The guide also suggests that multiple HEIs in a country or a region can come together to do the workshops.

The guide describes three different types of workshops. The first workshop, Stage 1, has a purpose of introducing HEInnovate self-assessment tool for those who have little or no previous knowledge of the tools. The second workshop, Stage 2, is intended for groups that are familiar with HEInnovate, and have used it before. The aim of that workshop is to identify key actions for change in their HEI and develop priorities and goals for an action plan. The third workshop, Stage 3, works as a follow up, and is considered to be the most important one of all three types. The target audience is individuals responsible for implementation of the action plan, and it aims to check progress and to identify challenges and existing barriers that hinder progress. Additionally, the guide also elaborates on selecting the right audience and strategies to recruit them for the workshops. Diversity of audience is encouraged as it makes the workshops have greater potential, the guide suggests.

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<sup>2</sup> Videos can be found under the digital resources tab on the HEInnovate website:  
<https://heinnovate.eu/en/resources/digital-resources>

#### **2.4.4. HEInnovate in the literature**

HEInnovate has gained much attention from both policy makers and researchers in higher education since its launch in 2013. On national policy level, this can be evident by the growing number of governments' interest and engagement with HEInnovate. As mentioned previously, at least five European countries have welcomed the European Commission and the OECD to conduct an HEInnovate country review. HEIs participate on a voluntary basis in these reviews, but they are highly encouraged to do so by their respective governments. These country reviews result in recommendations that are shared with HEI participating, and a country report that highlights actions taken by HEIs and governments to create value from academic knowledge and generate innovative services that meet their economic, social and environmental needs. Therefore, these country reviews do not only influence and inspire HEIs, but also work as a guide for governments illuminating areas that may need policy decisions on that level (OECD, 2017; OECD, 2017; OECD, 2018; OECD Publishing, 2017).

On the research level, much research has used HEInnovate as a theoretical framework to study HEIs' innovation and entrepreneurship capacity and activities. The method these studies have utilized this framework varied considerably. To illustrate, Sultan (2017), Badulescu et al. (2018), and Covas and Solcan (2018) have directly utilized the self-assessment tool in their study by using it to survey their study samples. Sultan (2017) have conducted 200 questionnaires in four Palestinian universities in the form of face-to-face interviews that involved teaching staff, administrators, students and top managers. The purpose of his study aligns with the main purpose of using the HEInnovate tool: analyze the existing entrepreneurial characteristics of Palestinian universities and identify necessary elements for them to become entrepreneurial universities. Badulescu et al. (2018), use the online self-assessment for their case study of the Faculty of Economics of the University of Oradea in Romania. 195 people have completed the self-assessment, of which 179 are students. To have more in depth insight to the results of the assessment, Badulescu et al. (2018) does not only rely on the result analysis provide by the HEInnovate tool but have also conducted a correlation analysis between the seven dimensions of HEInnovate. The aim of the study is to observe how the respondents appreciate entrepreneurship and innovation in their HEI, and particularly observe the correlation between different dimensions that comprise the HEInnovate tool. A similar approach to using the HEInnovate framework can be seen in a case study of the Academy of Economic Studies of Moldova by Covas and Solcan (2018). They use the self-assessment tool as a survey that is taken by 19 teachers, 101 students, and 62 employers from external stakeholders. The purpose of the study is to also explore strengths and weaknesses of the institution, and to highlight the important role that external stakeholders play in the context of developing an entrepreneurial higher education.

Other researchers have a different approach in using the HEInnovate framework. They analyze the framework and operationalize their own set of categories and variables. For example, in a case study of Bogor Agricultural University in Indonesia, Widhiani and Fauzi (2016) base their

analytical framework on the HEInnovate self-assessment tool and conceive 27 variables and 125 indicators in order to study its entrepreneurial transformation process with a focus on the role of leadership. They have collected their data from university leadership, faculty, students and external stakeholders using mixed methods that involve a structured questionnaire that they have developed, a number of in-depth interviews, and focus group discussions. The study aims to indicate what university leadership in Indonesia can do to pursue an entrepreneurial agenda. Another study that uses the HEInnovate framework, but not the tool, is by Papa and Demo (2018), which studies five Albanian public HEIs to learn what effects the recent policy changes has on the higher education sector. Instead of using the tool, they conduct interviews with HEIs' leadership, staff, teachers inside the institutions. The interviews do not include students or stakeholders. The interview questions are guided by the HEInnovate tool.

Research utilizing the HEInnovate framework is growing exponentially. This is illustrated by the few examples mentioned above. This research shows the variety of contexts and purposes that this framework is applied to. Moreover, it is interesting to see how some researchers use the assessment tool as a guide, but do not use the tool itself in their studies, or in other cases where other analytical methods are combined with the tool usage. These studies shows that this framework can be used for different reasons, varying from the basic need of identification of strengths and weaknesses in HEIs, including using it in HEI contexts that hardly consider themselves entrepreneurial (Sultan, 2017), to using it to track changes in the higher education system, or identifying specific needs in a certain dimension within the HEInnovate framework. In many cases, there is a considerable number of students and external stakeholders participating in the studies. The inclusion of these types of views is encouraged and emphasized by this framework.

Despite the growing number of studies utilizing HEInnovate framework to explore HEIs' potential, there is hardly any empirical research that focuses on how the tool itself is used. The examples above show a wide variety of conceptualizing the tool and using it. Moreover, with the growing number of HEIs using the self-assessment tool for their own purposes, there is hardly any documentations of how this tool is implemented.

## **2.5. Implementing Self-Assessment Tools in the Field of Quality Management in HEIs**

The last section of this literature review will shed light on two different institutional self-assessment tools used in HEIs that come from the field of self-assessment in quality management in higher education. There are three main reasons for making the choice of discussing such tools in relation to self-assessments in higher education entrepreneurship and innovation. First, the area of self-assessment in quality management is older and more mature than that of the area of self-assessment in the field of innovation and entrepreneurship in higher education. Therefore, a number of tools in this area have outlined detailed, step-by-step guides to how to use their self-assessment tools. Moreover, there are existing case studies that observe and document how HEIs engage with these tools. Second, there are quality management self-assessment tools tend to gather input for their assessments from different departments or services in an organization (e.g.

leadership, human resource management, research department, etc.). This is similar to HEInnovate as it is designed to assess the activities of different departments inside an HEI. Third, the self-assessment tool in the case of HEInnovate is intended to be used by unlimited number of individuals in higher education, which is similar to the cases of the selected quality management self-assessment tools which encourage including as many stakeholders as possible. Thus, some elements of the frameworks of implementing quality management self-assessments in higher education can be useful in anticipating or predicting the different steps HEIs would take when they engage with such tools. This would aid the process of forming a framework that can guide the data collection and can create a base for analyzing the results of this study.

### **2.5.1. Quality management self-assessment in higher education**

Quality management in higher education started to become an important topic in the late 1980s and early 1990s (José Tarí, 2010b). Self-assessment became a technique used to create change and continuously improve on quality systems in HEIs (José Tarí & de Juana-Espinosa, 2007). In the beginning many of the self-assessment tools in quality management were implemented in industrial organizations, but later on they were adopted in higher education as well after making some changes to make them suit the context of HEIs. There are numerous self-assessment tools that tackle the issue of quality management in higher education. To name a few, there are Baldrige Model in Education, The Deming Prize model in Japan, Charter Mark, EFQM excellence model, and the European Quality Improvement System (EQUIS). Focus will be given to the processes of implementing two self-assessment tools: the first is the European Framework of Quality Management (EFQM); and the second is the European Quality Improvement System (EQUIS). Both these frameworks have been widely spread, accepted by many institutions internationally, and most importantly, have detailed processes outlined, and have been studied extensively (EFMD, 2018; Hides et al., 2004; José Tarí, 2010; Lindstrom & Word, 2007).

### **2.5.2. The EFQM Excellence Model Self-Assessment Process**

The EFQM Excellence Model is a not for profit organization based in Brussels that was created in 1988 by fourteen European businesses. Its mission is “to be the Driving Force for Sustainable Excellence in Europe and a Vision of a world in which European organizations excel” (EFQM, 1999). By 2011, it had almost 500 members from more than 55 countries and 50 industries (EFQM, 2011). It focuses on establishing an appropriate management framework for organizations to be successful. This framework enables organizations to (ibid.):

- Assess their strengths and identify gaps in their stated vision and mission on their path to excellence
- Provide common vocabulary and method of thinking about the excellence of an organization
- Integrate existing initiatives, identify gaps, and remove duplications
- Provide basic structure for organization management system



Self-assessment is the EFQM's recommended strategy to improve an organization's performance. It provides a comprehensive and holistic review of an organization's activities and results referenced against the EFQM Excellence Model. The EFQM Excellence model consists of nine criteria, which are labeled: "Leadership," "Policy and Strategy," "People," "Partnerships and Resources," "Processes," "People Results," "Society Results," "Customer Results," and "Key Performance Results."

There are different approaches to the EFQM self-assessment: questionnaire, matrix chart, workshop, pro-forma and award simulation (EFQM, 2011; José Tarí & de Juana-Espinosa, 2007). HEIs select the approach most suitable to them depending on the time and resources they can spend, and on the goals they want to achieve from the self-assessment. It is worth noting that the pro-forma approach is the least selected for self-assessment, and many organizations don't aim for the award simulation approach (Hides et al., 2004). Regardless of the chosen approach, there are eight general stages for the self-assessment. These stages don't necessarily occur in the order specified below, as some of these stages happen simultaneously, or in different order all together. These decisions are made by an institution when it sets plan for the self-assessment. The stages are (EFQM, 2011; Hides et al., 2004; José Tarí & de Juana-Espinosa, 2007; José Tarí, 2010):

#### Step 1: development of management commitment

Leadership and management of an HEI are key factors in the self-assessment implementation. The commitment to the self-assessment can be in the form of the knowledge and approval of the self-assessment plan. It can also involve written communication from the leadership to each service concerning their participation in the process of the self-assessment.

#### Step 2: plan the self-assessment

An organization in this stage decides which approach is most suitable for its resources and goals.

- *The questionnaire approach* aims to obtain the views of (all) the people within an institution. It is quick and easy to apply, and it can be used alongside with other self-assessment approaches.
- *The matrix chart approach* has an organization create a series of achievement statements that can be rated from 1 to 10. The statements must match with all the nine criteria of EFQM framework, and therefore involves the creation of 90 achievement statements in total. Management teams are the ones who use the matrix and do the self-assessment to diagnose where the organization is in relation to the statements. There is a practical guide from the EFQM for what each rating reflects.
- *The workshop approach* has five phases: training, data collection, scoring workshops (self-assessment), prioritization of improvement actions, and review of progress. This is a powerful approach that allows building discussions and reach agreements regarding strengths and areas for improvement. However, it does require more time, resources, and needs expert facilitation.

- *The pro-forma approach* involves using a set of pro-formas, which has in total 32 sub-criteria of the EFQM framework. Assessment teams are created, and they collect appropriate information and then use the pro-formas to undertake the self-assessment. Unlike the previous approaches that rely (to different extents) on views of participants, the pro-forma approach bases assessment on factual information. However, it depends on good data protection practices, and may also miss recognizing some elements and the full story that aid organizational excellence.
- *The award simulation approach* is a process for entering the European Quality Award. It involves preparing to submit documents that abide to the criteria laid down by the EFQM Award Application. A team of trained assessors score the application and provide feedback report with a list of strengths and areas for improvement.

### Step 3: Create teams to perform self-assessment and training

For each service in an HEI a team has to be created, who would be responsible for completing the self-assessment process. Some HEIs include people only from within the services under assessment, while others choose to involve external stakeholders in order to gain “customers’ opinion.” Training should be provided to the teams prior to implementing the self-assessment, to make sure that everyone involved is familiar with the EFQM model and acquire working methodology to understand how to conduct self-assessment.

### Step 4: Communicate self-assessment plans to teams

The objectives of the self-assessment have to be clear to everyone involved in the process as well as the plan.

### Step 5: Conduct self-assessment

Depending on the selected approach and set plan, the self-assessment is conducted.

### Step 6: Establish action plan

Establishing an improvement plan to be submitted to higher management is a critical step of the self-assessment. If this step is not taken, it is unlikely that improvement actions would be implemented, and the whole process is likely to fail.

### Step 7: Implement action plan

After approval from top management, the implementation plan goes to action. Reporting mechanism between services to top management and quality area management are important.

### Step 8: Review

The review consists of monitoring periodically the degree of implementation of the action plan.

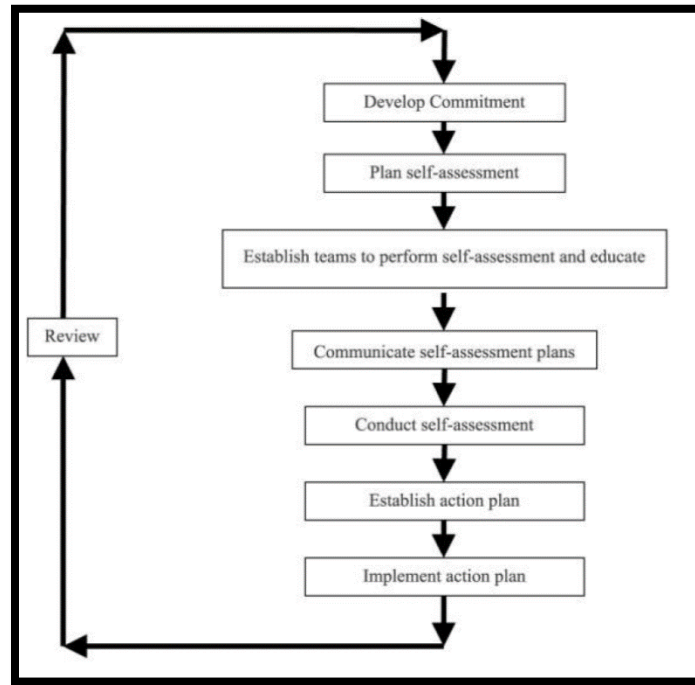


Figure 1: Eight main general stages for applying the EFQM Excellence Model (Hides et al., 2014)

### 2.5.3. European Quality Improvement System (EQUIS).

EQUIS is an international system of strategic review, quality improvement and accreditation for the assessment of HEIs that provide business and managerial education (EFMD, 2018). It was first launched in 1997 by the European Foundation of Management Development (EFMD) and was designed with collaboration with existing national accreditation bodies in the field of management, and the European Quality Link association (EQUAL). It is currently supported by more than 900 members from 88 countries. EQUIS is based in Brussels, Belgium, and has offices in Geneva, Hong Kong, Miami and Prague (ibid.).

EQUIS is comprehensive institutional accreditation that aims to ensure rigorous quality control by benchmarking an HEI against international standards. It covers all activities in HEIs including degree and non-degree programs, knowledge generation and contribution to the community. The EQUIS process is based on a conceptual framework of quality criteria. It has nine main components which are: “Context, Governance & Strategy,” “Programs,” “Faculty,” “Research and Development,” “Executive Education,” “Resources & Administration,” “Internationalization,” “Ethics, Responsibility & Sustainability” and “Corporate Connections” (EFMD, 2018; Lindstrom & Word, 2007).

The accreditation process typically takes two to three years but can take 15 months in the most favorable circumstances. The detailed process stages and timeline is illustrated in Figure 3 below.

The self-assessment is the 6<sup>th</sup> stage in the process and is only carried out when an HEI passes the initial eligibility process. The self-assessment stage takes from six months to one year to complete depending on the size and complexity of the HEI and its experience with accreditation. It is a rigorous process with the aim to draft a self-assessment report that constantly refers to the EQUIS standards and criteria and covers all the areas of EQUIS framework.

Figure 2: Timeline and stages of the EQUIS accreditation process (EFMD, 2018)

The EQUIS guide indicates six actions and recommendations that go into the design and implementation of the self-assessment process. They are as follows (ibid.):

An HEI should appoint an Accreditation Project Leader and an Accreditation Committee to manage the process and draft the report. The Accreditation Committee should consist of

representatives from key stakeholder groups including representatives from the student body to co-ordinate the student contribution to the self-assessment.

- Communication

An HEI top management team should communicate comprehensively to the institution the aim of the self-assessment exercise. It is strongly recommended to include all key stakeholders in the assessment. These stakeholders will need to understand the process fully in order to maximize their contribution and implementation of the self-assessment process. Moreover, effective and continuous communication should be maintained throughout the process. Good communication practices result in obtaining commitment from stakeholder to secure resources and improve quality. Therefore, communication should also be extended to presenting results of the self-assessment, which should be balanced, realistic and honest.

- Methodology and Planning

Development of a detailed plan early in the process of the self-assessment is key to its success. There is no specific format for the self-assessment approach developed by EQUIS. Each HEI should develop its own plan to suit its specific needs. Nevertheless, the EQUIS guide provides three criteria that should apply to the design of the self-assessment process. First, the process should be *systematic*, well-planned, thorough and comprehensive. It should be driven by a methodology that seeks to answer key questions, and not simply aim to have a tick-box approach. Second, it should be *objective and balanced*. It should aim to document current strengths, weaknesses, opportunities and threats, as well as determine actions needed to address these issues. To reach this goal, the assessment team should not restrict itself to the EQUIS criteria for guidance and aim to incorporate as many sources of information as possible. Third, *participation* in the data collection and evaluation of results should involve diverse groups to reach key conclusions and recommendations. This would make the process more objective, and it ensures incorporating different perspectives, improves communication, and commitment to assessment findings.

- Reporting

The format of the self-assessment report should be decided by the HEI and it should take into account the requirements of EQUIS in terms of covering all of its criteria.

- Data Collection

After deciding the methodology of the self-assessment, and the general report format, an HEI at this stage would need to determine what information and documents to collect. This step requires considerable time and effort. Identifying key sources of information at an early stage, as well as going through the previous action steps would make the responsibilities clear, and the collection,

organization, dissemination and analysis of information smoother and systematic. An HEI should seek a wide variety of sources including internal and external reports, special surveys, interviews and focus groups.

- Other Considerations

The national context in which an HEI operates in should be clearly explained in the self-assessment report to highlight existing constraints and quality expectations of the local environment.

## **2.6. Conclusion and Research Gap**

Researchers have indicated the need for more empirical research to be done in the area of entrepreneurial education self-assessment (Pittaway & Cope, 2007; Pittaway & Edwards, 2012; Ruskovaara et al., 2015; Ruskovaara et al., 2016). This literature review reveals more details on this existing gap. There is a rising need for using self-assessments to gain more understanding on what practices are effective for HEIs to become more entrepreneurial and innovative. This need is met by the development of self-assessment tools that are highly diverse in their approach, purposes, and methods of implementation. With the existing diversity, the processes of using these tools is varied. Research shows that there is a strong link between the process of using a self-assessment tool, and its potential impact on an HEI (Arzeni & Tyson, 2018; Hides, Davies, & Jackson, 2004b; José Tarí & de Juana-Espinosa, 2007b; José Tarí, 2010; Kasperaviciute, 2013). However, there is little empirical research done to observe and analyze these processes. Ruskovaara and Pihkala (2016) point out that it is unclear to which extent HEIs use self-assessment tools in the field of innovation and entrepreneurship, and there is hardly any information about how representatives of different HEIs apply such tools in their institutions.

Looking at HEInnovate self-assessment tool, the scene is not different. Even though there is a growing number of research utilizing HEInnovate framework, there is hardly any that observe and analyze how HEIs use this tool. Moreover, it can be observed that researchers using the tool have done so using diverse methods, and for different purposes. This raises the question of how HEIs are using the self-assessment tool, and what their purposes are for doing so. The lack of research addressing these questions makes the process of engaging with self-assessment seem like “black boxes” that when read, can reveal valuable information that can be key to effective usage of self-assessment tools that may lead to better organizational learning and development, and it can also become a base for the continuous development and improvement of self-assessment tools in this field.

### **3. Conceptual Framework**

The nature of this study is of a practical and empirical one, as it mainly investigates how HEIs engage with self-assessments, and more specifically, how HEIs engage with HEInnovate self-assessment tool. To guide this research, the author constructed a conceptual framework that comes from looking at two elements. First, the author sees similarities between conducting a self-assessment and running a project in an organization. Indeed, Kerzner (2014) indicates that both non-project-driven and project-driven organizations are managed in the form of projects. Thus, from the field of project management, the author aims to ground the conceptual framework basing some of its elements from the Project Life Cycle framework (PLC). Second, since the author has observed that PLC may miss some elements from the nature of conducting self-assessment in higher education because PLC is mainly practiced within business projects, she has also included a number of institutional self-assessment processes in the area of quality management in HEIs, which have been previously explored in section 2.5 in the literature review. By looking at these two bodies of literature, a conceptual framework is laid out at the end of this chapter, with an explanation of the ways it would serve to answer the research questions and sub question.

#### **3.1. Project Life Cycle**

In an attempt to observe the way HEIs engage with self-assessment tools, one can look at the process in the form of steps or stages that are taken in order to complete the self-assessment within an institution. In this light, it is plausible to consider the undertaking of self-assessment in an organization as a “project” that requires a certain level of project management to achieve assigned goals. The Webster dictionary defines project as: “That which is projected or designed; something intended or devised; a scheme; a design; a plan Vented much policy, and projects deep” (Webster Dictionary, 2018). In the literature of project management, Pinto and Prescott (1988) observe that there are numerous definitions of “project.” However, most researchers agree that projects have the following characteristics: a) it is specific and has a limited budget; b) has a timeframe of which it has to be completed; c) possesses performance goals, a set of goals; and d) it is a series of interrelated activities (Pinto & Prescott, 1988). This makes project management a specific form of management. A basic definition of project management is: “the art and science of achieving desired objectives with given resource constraints, including time” (Thamhain, 2014).

Because a project has a clear beginning and end in contrast to conventional business operations, the idea of project life cycles came into being. This framework has the benefit of breaking down a complex process into stages or phases. Project stages can be arranged in many different forms and operational formats, and that is because of the wide and diverse ranges of what a project may be (Thamhain, 2014). This brings flexibility to the process of running a project, nevertheless, managers should define project phases, and divide a project into logical steps and activities that have inputs, outputs, interfaces, and workflows (ibid.). To help guide project managers, many project management standards have generically and broadly defined four project phases that can be used as a guide for developing more detailed project-specific phases. These phases are the following (Kerzner, 2014; Labuschagne & Brent, 2005; Pinto & Prescott, 1988; Thamhain, 2014):

- Initiating

This phase aims to generally build an understanding of and goals from a project. It consists of evaluation of project ideas; defining its scope, cost, and baseline; assess its feasibility; its alignment with general strategy and its value; initial project planning; and individuals responsible for decision making.

- Planning

This phase brings details to a project. The project is clearly defined in detail. Additionally, work breakdown, assigning responsibilities, creating schedules and budgets happen at this phase.

- Executing

This phase is usually initiated by organizing and creating a project team. This phase is most often the longest and most resource-intensive one. This is because it includes the implementation of the project; the detailed work and its integration; monitoring progress and in some cases reporting it; problem solving when they occur; and leading project team to the desired outcomes.

- Closing

It is common for this phase to occur as an integrated part at the end of the executing phase. It also includes documentation of the final project, lessons learned, resolving project team; performance evaluation; and other possible administrative steps associated with closing projects.

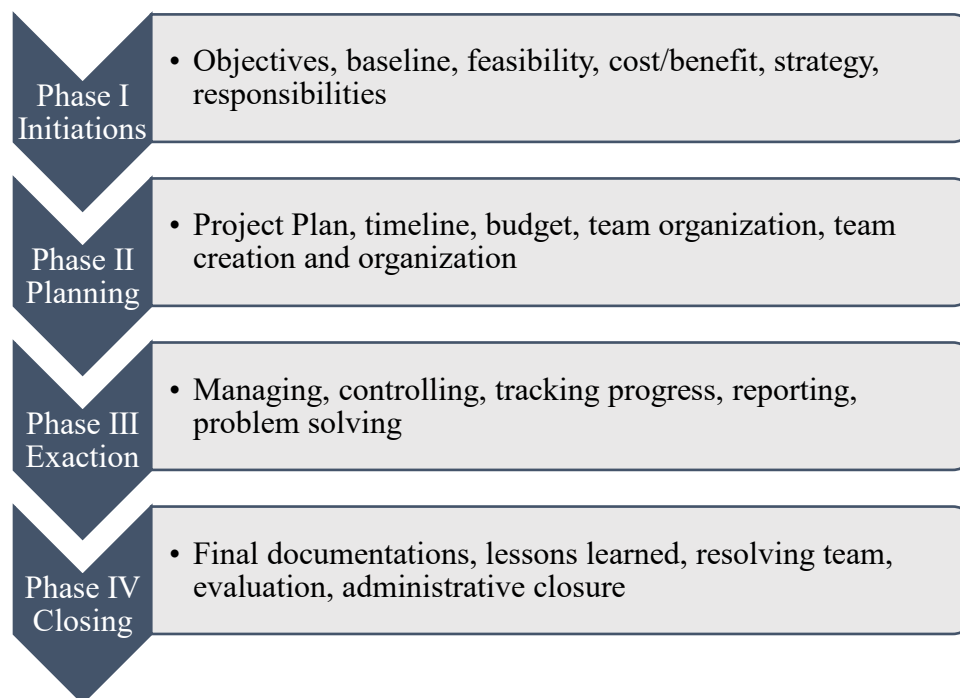


Figure 3: Project Life Cycle. Adapted from (Kerzner, 2014; Pinto & Prescott, 1988; Thamhain, 2014)

Project Management Life Cycle for different projects in immensely diverse fields and organizations. It exists within IT sectors (Somers & Nelson, 2004; Thamhain, 2014), automobile



sector (Thamhain, 2014), manufacturing sector (Kerzner, 2014), and within HEIs (Bandara et al., 2010; Kerzner, 2014; Leybourne & Sainter, 2012). Therefore, to give a narrower perspective on the stages of planning conducting self-assessment in HEIs, it is necessary to examine existing plans for implementing organizational self-assessment in higher education.

### 3.2. Self-Assessment Process Conceptual Framework

The self-assessment processes of EFQM and EQUIS that were previously explored in section 2.5 in the literature review provide tangible examples of how self-assessments are conducted. In addition, the PLC offers a general outline for introducing projects in organizations. Therefore, some of their elements can be adopted to build a framework that can guide the data collection and the analysis of this study. Even though PLC, EFQM and EQUIS may seem different at first glance, they all emphasize similar components that they consider key to success. To summarize points of similarities, it can be said:

- Having *clear plan*, stages and *goals* for the self-assessment is crucial. An early detailed plan that is developed early in the process makes conducting the self-assessment more efficient, effectiveness and makes gathering the appropriate data possible. Clear goals go hand in hand with clear plans. Goals would guide an institution through the process of designing an appropriate plan. It would, moreover, keep everyone motivated from the beginning till the end of the process. High motivation facilitates the completion of deep engagement with assessment. This last component is particularly emphasized by Hides et al. (2004) in a case study they did in UK universities. They conclude that waning enthusiasm can make the assessment ineffective. Moreover, it prevents rendering the self-assessment to be “just another audit” or “paper chase” (ibid.).
- Assigning clear roles and *responsibilities* for those leading the process of conducting a self-assessment is something that is emphasized in PLC and are seen as main components of the guides for EFQM and EQUIS. Selecting suitable person(s) with appropriate background experience, and qualifications the foundation for a successful assessment process and final analysis. The EFQM guide encourages integrating the self-assessment within the quality management department to avoid duplication of efforts, since this self-assessment mainly deals with quality and excellence in an organization.
- *Commitment* to the process is a highlighted component. In the PLC, “commitment” comes in the form of setting a contract between customers and project leaders. In a self-assessment process, there are no actual “customers,” nevertheless, commitment from leadership towards the self-assessment process and plan is important to establish early on in the process. This ensures continuous support from them. Additionally, commitment of all involved stakeholders in the process is consequential for providing all the needed data for conducting the assessment, and eventually, the proper integration of an action plan that results from the assessment process.
- Constant *communication* between the process leaders and the institutions leadership is needed to have their support throughout the process. Additionally, communication between process leaders and all the stakeholders involved ensures high engagement rate, proper understanding of the process objectives, gathering the right data, and maintaining

motivation and interest in the assessment-process. The latter form of communication involves conveying assessment process goals and procedure to the stakeholders. Communication may include conducting training for involved stakeholders to ensure their complete understanding of the tool and process.

From the above, the following framework that consist of six stages is created to guide the research method, answer its questions, and conduct the analysis. This study will focus on the first four stages as they can be considered as the labor intensive (as outlined in the PLC) and have direct effects on the last two stages. Figure 4 visualizes this framework which is also described below.

#### Stage 1: Decision to take self-assessment (initiation)

At this stage, HEI leaders or top management perceive value from going through this exercise. At this stage, it is important to understand the purpose of the self-assessment, set clear goals for the exercise, and commit to the process of completing the assessment. At this stage, selecting the person(s) responsible for planning and leading the process of completing the self-assessment is done. This stage is the corner stone for creating strong motivation to engage with the self-assessment, raises the chance of completing it effectively, affects the perceived value of its results, and gaining leadership support when needed.

#### Stage 2: Plan the self-assessment

The person(s) sets a self-assessment plan depending on the goals that the HEI has set, and also on the time and resources available for the institutions. This stage determines the type of data that will be gathered. Moreover, the clearer the plan is outlined the more likely the self-assessment process be efficiently completed.

#### Stage 3: Communication of Plan

This stage is separated from the planning stage to highlight its significance and its impact. Proper communication would lead to a higher understanding of the process from all stakeholders, and possibly a higher rate of engagement in the process.

#### Stage 4: Executing Self-Assessment

This step happens according to the set plan in stage 2. It also involves assessment leaders tracking progress of this plan, and problem solving in case any occur.

#### Stages 5 & 6: Closing

These two stages mirror the closing stage in the PLC framework. Stage 5 consists of creating final report, identifying strengths and weaknesses, and establishing an action plan. This stage can define the success or failure of a self-assessment process. If it is not taken, there is a high probability that the self-assessment would have no impact on an organization and the results would not translate

to actions. Moreover, the lack of undertaking this step may reflect the effectiveness of all the previous steps. Stage 6 consists of implementing the action plan created in stage 5.

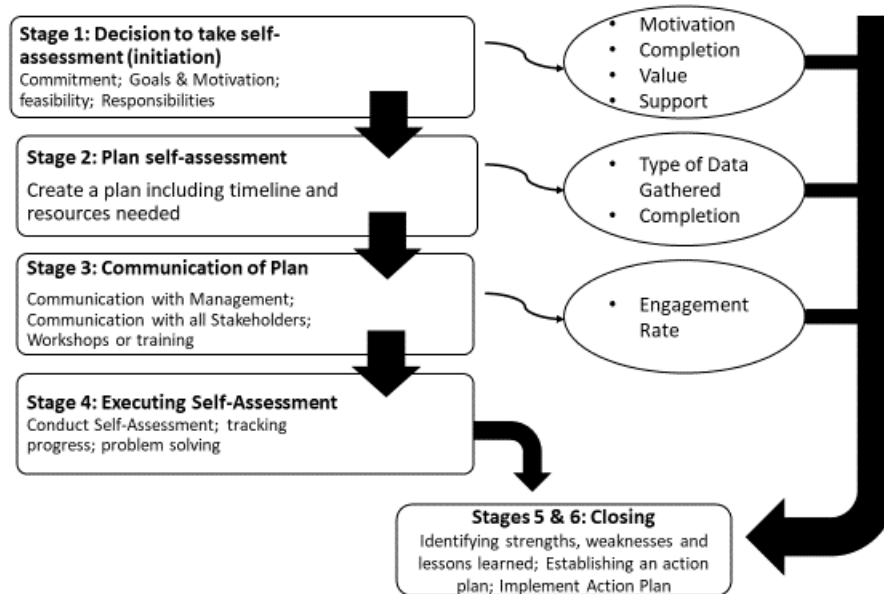


Figure 4: Conceptual framework: Stages of Implementing Self-Assessment

The outlined conceptual framework guides answering the main question of this research, which is: how do HEIs engage with the HEInnovate self-assessment tool? By analyzing the gathered research data within the lens different stages and actions. This framework would also help identify and explain HEIs' impressions from the self-assessment, rate of success, and link these elements to the actions taken while implementing the assessment. Similarly, the sub questions of this research come from this framework. Question a. "what are the steps HEIs take to understand and complete the self-assessment tool?" aims to illuminate exact actions taken by HEIs. Question b. "what are the roles the individuals responsible for leading the process of completing the self-assessment in an HEI? How are these individuals selected?" aims to pay particular attention to the "responsibilities" component. Finally, question c. "how do different methods of engagement with the self-assessment tool affect the outcome and perceived value of it?" aims to analyze the strengths and weaknesses of plans set by HEIs to engage with the self-assessment.

## **4. Research Method**

This chapter gives details on the research method selected and its justification. The aim of this research is to explore the ways in which HEIs engage with the HEInnovate self-assessment tool. As previously detailed in the Literature Review, little studies have focused on the usage of self-assessment tools in the area of entrepreneurship and innovation in higher education. Moreover, there is no previous research done to explore how HEIs engage with the HEInnovate self-assessment in the context of Austrian higher education. This creates the need to gather empirical evidence in order to be able to answer the main research questions and sub-questions. This chapter outlines first the research strategy selected, and the reasons for choosing it. It then moves to providing details on the data collection method. Afterwards, the strategy for data analysis is explained. Finally, the chapter will list research limitations and potential problems and challenges.

### **4.1. Research Strategy**

In order to understand how self-assessment processes are developed in HEIs, and why specific sources of actions are taken, the case study approach has been selected for this study. A case study is defined as a design of inquiry in which the researcher develops a detailed account and an in-depth analysis of one or more cases (Creswell, 2014; Johnson & Christensen, 2008). They often involve a program, event, activity, or process, and are bounded by time and activity (Creswell, 2014). This approach is suitable for this study for a number of reasons. As demonstrated in the literature review, there is a conspicuous lack of research in the area of this research, which makes this approach suitable (Morse, 1991). Additionally, this research method has been chosen because this approach is preferred when “why” and “how” questions are being asked (Creswell, 2014). Case studies can involve single or multiple cases and the collected data can be quantitative, qualitative or mixed (*ibid.*). This research focuses on the details of implementing self-assessment processes in nine cases using qualitative evidence.

The sample of the HEIs selected can be representative of the diverse institutions that exist in Austria. It consists of universities, universities of applied sciences, and one university of continuing education. The HEIs come from both the public and private sectors, and vary in their sizes, visions, missions, and settings. The number of HEIs that had the possibility to participate in this study was limited. Only eleven HEIs have participated in the OECD country review, ten of which were selected before the country review started, and one was added while the country review was taking place. As part of this participation, HEIs were encouraged to complete the self-assessment as means to prepare for the country review. Therefore, the pool of HEIs from Austria that can participate in this study only includes the ten HEIs that were selected before the country review was initiated. The researcher aimed to include all ten HEIs in this study. She contacted all of them, and nine of them have participated. From this sample, seven of these institutions have completed the HEInnovate self-assessment tool as part of their preparation for the country review. Two institutions have decided not to take the HEInnovate self-assessment for different reasons and

have prepared for the country review using other methods. The researcher decided to include the two HEIs that did not take the self-assessment in her study in order to learn why they have chosen not to; and to explore what other methods these HEIs have used to prepare for the country review.

To collect the main body of the research data, the researcher chose to conduct semi-structured interviews with persons who were responsible for leading the process of engaging HEIs with the self-assessment tool. Semi-structured interviews allowed the researcher to collect data from nine different HEIs. This wouldn't have been possible if the researcher had selected to rely on the observation method where she would be present in the HEIs throughout the whole process. The researcher preferred this method so she would be able to include a larger number of HEIs to capture the variety of processes that occur within them. Other benefits for the interview method include allowing the researcher to have focus and control over the data collected, and the possibility of gaining access to contextual and HEI culture from the interviewees that can be of value for the analysis process. Data for this study was also gathered through documents and one unstructured interview. Both of these procedures serve as complementary data to the main body of data.

#### **4.2. Data Collection**

This research was conducted in two phases. The first phase is the literature review, where the author explores the field self-assessments used in higher education and find the existing self-assessment tools that explores the innovative and entrepreneurial capacity in higher education. The literature review also explores the HEInnovate self-assessment tool and framework background, ways that it was used, and reasons why it was used. The purpose of this literature review is to explore and understand existing tools used by higher education institutes; how and why they are used; and the existing research gaps in the area of engagement of self-assessment tools that deal with the themes of innovation and entrepreneurship in higher education.

The second phase of the research consisted of collecting data for the study. Three main sources of data were used. First, the researcher gained access to a document prepared specifically for the team of OECD experts who would conduct the site visit in Austria. The document is titled "HEInnovate in Austria: Background Report," which was put together by a team of experts in Austria to provide an outline of the higher education scene in Austria and give specific details on the activities and policies related to innovation and entrepreneurship in higher education. The document was written in English.

Second, an unstructured interview was conducted with a researcher at WPZ Research. This research institute was selected by the Austrian Federal Ministry of Education, Science and Research to coordinate communication between this ministry, the OECD, and participating HEIs in the country review. WPZ Research was also responsible for guiding HEIs through the process of implementing the HEInnovate self-assessment. The purpose of this interview was to gain an overall perspective of the reasons why Austria decided to participate in this country review; reasons why HEIs applied to become part of the country review; and the major challenges and

impressions HEIs had about the process. This interview helped the researcher refine the interview guide. The interview was approximately one hour long. The researcher had prepared a number of points and themes that she wished to cover, but the interview was mainly led by the interviewee as she continued providing information that can be relevant to the context of the study. The interview was not anonymous. It was recorded and transcribed shortly after it was conducted.

Third, using the data collected from the two previous steps and the conceptual framework described in Chapter 3 the researcher created two interview guides to conduct semi-structured interviews. The interviews can be found in Appendix A of this thesis. Semi-structured interviews were conducted with the person or persons in HEIs who were responsible for leading the process of completing the HEInnovate self-assessment tools in their own institutions and/or preparing their institution for the HEInnovate country review. Average interview time was one hour per interview. Ten HEIs accepted the invitation to participate in the HEInnovate country review. All ten HEIs were contacted by the researcher, and nine of them have participated in this study, with a total of 12 people from the nine institutions. Below is a list of the nine HEIs in alphabetical order:

- Danube University Krems: a public university specialized in continuing education and post graduate education. It is located in Krems an der Donau, Lower Austria. It was established in 1994. It currently serves about 9,000 students and has about 20,000 graduates.
- Graz University of Technology: a public university that was established in 1811 and comprises of seven faculties. It is one of five universities in Styria, and it is the second largest university in Austria. It offers bachelor's, master's and doctoral programs and covers all technology and natural sciences disciplines.
- Paracelsus Medical Private University: a private university established in 2002. It is located in Salzburg municipality in Austria. Education offers cover study of human medicine, study in pharmacy, and nursing sciences. They also offer doctorate degrees in certain study programs, and a number of further education programs.
- University of Applied Arts Vienna: a public university that was established in 1867 and has had the university status since 1970. They offer diplomas, bachelor's, master's, doctoral programs.
- University of Applied Sciences Technikum Wien: a public university that was founded in 1994. It became the first university of applied sciences in Vienna in 2000, and it is the largest technical university of applied sciences in Austria. It offers bachelor's and master's degree programs.
- University of Applied Sciences Upper Austria: a public university and is considered to be the largest university of applied sciences in Austria. This university offers bachelor's and master's degrees and has four main focus areas: Informatics, Communications and Media; Medical Engineering and Applied Social Sciences; Management; and Engineering.
- University of Innsbruck: a public university that was established in 1669. It is the third largest university in Austria, and it is the largest university in the Austrian Bundesland of Tyrol. It offers Bachelor's, Master's, and Doctoral program across a wide variety of disciplines offered by 16 different faculties.

- University of Vienna: a public university established in 1365. It is the oldest university in the German-speaking world. It is the largest university in Austria. It offers Bachelor's, Master's and Doctoral programs covering many disciplines. It is considered to be one of the largest universities in Europe, and one of the most renowned, especially in the Humanities.
- Vienna University of Economics and Business: a public university that was established in 1898. It is the largest university focusing on business and economic in Europe. It also has one of the largest student bodies in Austria.

The interviews were conducted using different formats according to the availability of interviewees. Whenever possible, interviews were conducted in person or using Skype call. Phone calls were used when it is not possible to travel to the institution and internet connection was not reliable. Email interviews were the least preferred way, but the researcher resorted to it when the interviewees did not have a window of time possible for interview but wanted to participate in the study. The researcher conducted interviews with five HEIs in person; two HEIs using Skype call; one HEI using a phone call; and one HEI using an email interview. All the interviewees were open for follow up questions to clarify any vague points or provide additional information when needed. When two people were responsible for leading the process of the usage of the HEInnovate self-assessment tool, the interview was conducted with them simultaneously to avoid repetition of information and to create a fuller picture. Twelve people in total participating in the interview from all nine HEIs. All the interviews were recorded and transcribed shortly after they were conducted. Two interviewees requested to review the information the researcher was going to use in her research and provide an additional consent to it. The researcher followed up with them by sending them the complete interview script highlighting the parts with the information she was going to use, and consent was provided by them.

The interviews with participants were not anonymous, and all the interviewees gave consent to reveal their identities, positions, and HEIs they are working for. However, the researcher decided to report the findings of this research anonymously by coding the HEIs and the participants. The reason for this decision is to focus the readers' attention on data collected rather than on different HEIs. Nevertheless, it was essential to request the interviewee's consent for not collecting the data anonymously because the researcher cannot guarantee their anonymity in this study.

### **4.3. Framework for Data Analysis**

Following the qualitative data analysis guide provided by Creswell (2014, p. 247- 248), the data gathered for this study was analyzed. First, all the data gathered were organized according to their different types and sources of information. Second, the researcher read all the data gathered to create a general sense of the information and to have an opportunity to reflect on the overall meaning and impressions.

Third, the researcher transferred all the data to a qualitative data analysis software called QDA Data Minor Lite. This software has data analysis features similar to NVIVO. It allows the researcher to code and analyze the gathered data. Rossman and Rallis (2012, from Creswell 2014) define the coding as “the process of organizing the data by bracketing chunks and writing a word representing a category in the margins.” The codes created followed the themes found in the literature review and the structure created by the analytical framework. Additionally, some codes captured repetitive patterns in different HEIs and any surprising or unanticipated information. Forth, after coding the data, descriptions were added to the codes, and they were categorized to prepare them for analysis. Seven categories were created, and they are as follow:

- Study context and background on Austria’s higher education
- Steps HEIs take to complete the HEInnovate self-assessment
- Motivation of HEIs to engage with HEInnovate self-assessment
- Roles of the persons responsible for leading the process of completing the self-assessment
- Perception of self-assessment values
- Perspective of HEIs that declined using the self-assessment.

Fifth, the themes and categories of the codes were advanced by describing and represented using the qualitative narrative approach (Creswell, 2014). It was used to answer the first sub-question: what are the steps HEIs take to understand and complete the self-assessment? The events taking place in the HEIs were mentioned chronologically, and visuals were created to illustrate different actions and timelines HEIs followed. The purpose of this narrative is to answer that question and also to lay the foundation that would facilitate the answer and discussion of the other sub-questions. The final step involved interpretation of the quantitative research by asking “what were the lessons learned?” (ibid.). The researcher relied heavily on personal interpretation of the data by comparing the nine different case studies with each other and their outcomes. She also relied to a certain degree on elements frond in the literature review relating to using self-assessment tools. This final analytical step is used to form the research conclusion, suggestions for different stakeholders, and suggestions for new research questions that need to be asked.

#### **4.4. Limitations and Potential Problems**

There are a number of limitations associated with the research method the researcher selected. Relying on semi-interviews as the primary source of data can result in the following limitations:

- The information provided is indirect and is filtered through the participants’ views and perspectives.
- The researcher is not able to observe the process of completing the self-assessment tool in its original setting in the higher education institutes. This may result in gaps of information that can only be gathered when observing the process in action.
- The presence of the researcher may bias resulting in participants’ different levels of willingness to engage and share information with the researcher.



- The email interview in particular does not allow “natural” and spontaneous information sharing, which may result in different level of information shared compared to the other interview methods used.

Nevertheless, this method was selected because of its suitability for this particular case study format. It allows the researcher to collect data from nine different HEIs. Additionally, observing the process in the field might have been impossible because the researcher may not gain that type of access to HEIs governance and administration.

There were a number of anticipated problems. First, many of the documents outlining the Austrian higher education systems and their policies are only available in German. However, the researcher was able to overcome this limitation by gaining access to the “HEInnovate in Austria: Background Report,” which was prepared in English by a team of experts from Austria. The second anticipated problem involved locating the process leaders in each HEI and requesting a timeslot to interview them. It was not clear who leads the process of engaging HEIs with the self-assessment tool. This problem was overcome after the researcher participated as a junior researcher in the OECD panel that reviewed the HEIs. Through this opportunity, the researcher was able to identify the process leaders and contact them in person.

## **5. Research Findings and Discussion**

This chapter is dedicated for research findings. It starts by giving details on the context of the study relying primarily on two sources: one is the HEI Country Review Report prepared by a group of experts specifically for the HEInnovate country review (Ecker, Campbell, Pechar, Reiner, & Welp-Park, 2018); and an unstructured interview conducted with a researcher who is a part of the national expert team at WPZ Research. WPZ Research has an important role in the country review because the Federal Ministry of Science and Research contacted them and requested them to write the country report, and later to guide and accompany the process of completing the self-assessment in HEIs and the coordination of the peer-review visit.

The rest of the chapter is dedicated to outlining findings and answering the main question and sub-questions of this research, as well as discussing the findings within the conceptual framework and the literature reviewed previously. It is worth noting that one of the findings of this research is that two out of the nine HEIs who participate in the HEInnovate country review and in this study have declined to use the HEInnovate self-assessment tool. The views of these two institutes are included to explore why and how they made this decision.

### **5.1. Context of Study: HEInnovate Country Review in Austria**

#### **5.1.1. Innovation and entrepreneurship in Austria's higher education**

Austria's higher education system consists of 22 public universities, 31 private universities, 21 universities of applied sciences (Fachhochschulen), and 14 University Colleges of Teacher Education (ECA, 2014). They are regulated by the Federal Ministry of Science and Research, which also regulates the entire educational system in Austria (Ecker et al., 2018). Universities are the only entities that can award doctorates and offer doctoral or PhD studies. However, universities of applied sciences can cooperate with universities to offer such studies (ibid.). Almost 80% of all students in Austria enroll in public universities therefore, it is considered as the backbone of the higher education system in Austria.

Austria places high emphasis on entrepreneurship in education in general and in higher education in particular. This stems from the belief that education has a role in stimulating entrepreneurial attitudes and provide the knowledge and skills that support such activities. This is reflected in public policy initiatives, and also aligns with other initiatives found in European Member States, and with the recommendations of the European Commission.

To bring this into perspective, Austria is considered as a Strong Innovator according to the European Innovation Scoreboard report (Bieńkowska & Moedas, 2017). Austria's strongest areas are linked to firm investments, attractive research systems, and intellectual assets. Parameters related to higher education activities are generally above than average compared to the rest of EU performance. Some examples of these parameters are: new doctorate graduates, population with

tertiary education, lifelong learning, international scientific co-publications, most cited publications, and foreign doctorate students. Austria, however, has some relative weaknesses compared to the rest of the EU countries which are: employment impacts, sales impacts, and financial support (ibid.).

The Global Entrepreneurship Monitor (GEM) 2016 report on Austria echoes that of the Innovation Scoreboard. The GEM report indicates that Austria is in the leading group of European countries with a good support system for innovative and technology intensive startups, and strong research and development (GEM report cited from Ecker et al., 2018).

These results can be attributed to the Austrian strategy for research, technology, and innovation of the Austrian Federal Government (RIT Strategy) that was initiated in 2011. The main objective of this strategy is to prepare Austria for the future by strengthening research, technological development and innovation, which would result in the creation of high-quality jobs, and support sustainable growth of the economy (BKA et al., 2011). With these areas in focus, the RIT Strategy aims to elevate Austria from the group of Innovation Followers to the group of Innovation Leaders on the European Scoreboard (ibid.). The framework of this strategy identifies five interrelated areas that need to be addressed. The first area is the education system from early childhood up to models of lifelong learning. RIT Strategy considers appropriate education to be a prerequisite for innovative thinking and actions. The second area is basic research, which is considered to be an important element for the innovation system. Basic research is a key area of the government's responsibility, which focuses not only on improving the infrastructure of research, but also develop performance agreements with HEIs. The third area is innovation and corporate research, which focuses research activities and development in companies which makes them competitive and help generate economic growth and new high-skilled jobs. The fourth area is governance of the research and innovation system. The vision in this respect is not to limit political governance to the research, technological development and innovation (RTDI) policy. Effective governance happens with coordination with other policy areas, especially education policy, competition policy and a general policy for international openness and mobility. This coordination creates mutually beneficial dialogues between science, business and society. The fifth area is funding system. Funding systems are to be adjusted according to the RIT Strategy target, which is to make Austria an Innovation Leader. The new system of funding is mostly competition-based and aims to achieve maximum efficiency and effectiveness.

### **5.1.2. HEInnovate in Austria**

According to the interview with the researcher from the WPZ Research, the Federal Ministry of Science and Research (referred to as “the Ministry” from this point onwards) was aware and interested in HEInnovate tool and country reviews. It was one of the topics presented in the University Business Forum in Vienna, which was hosted by the Austrian Federal Economic Chamber in February 2016 (BMWWF, 2016). The Ministry's interest grew after the event, and they thought that the HEInnovate tool and framework would be beneficial for HEIs in Austria.

In the Fall of 2017, the Ministry requested the Higher Education Research Section at WPZ Research to write the Austria's country report. The purpose of the report is to orient the team of experts with the education system in Austria, main stakeholders involved in the system, and activities related to entrepreneurship, innovation, and knowledge transfer in Austrian HEIs. Afterwards, the role of WPZ Research grew to include accompanying and guiding HEIs through the process of completing the self-assessment and preparing for the country review. The interviewee from the WPZ Research to participate in the HEInnovate training event in Brussels that was held in December 2017. The OECD then suggested she, the interviewee, introduce the HEInnovate tool to the Austrian HEIs, and encourage them to use it as a mean to prepare for the country review.

She and her team at the WPZ Research did a test run of the HEInnovate tool. In January, the Ministry created a launch event with HEIs to orient them about the event of the HEInnovate country review. The usage of the tool was presented then at this event. Some HEIs representatives were familiar with it, while others heard about it for the first time there. After the presentation, HEIs were highly encouraged to use the tool, especially if they decide to participate in the country review. It was emphasized that the self-assessment is not a benchmarking tool, and results should not be compared with other institutes. It serves the purpose of informing the institution itself of its status. Moreover, if an HEI decides to take the self-assessment, sharing the results with the peer review team would be optional, and can be done for the purpose of raising certain topics or issues that an HEI would like to discuss with the peer review team. After the launch event and the determination of the list of HEIs participating in the country review site visits, the team from WPZ Research became responsible for guiding the HEIs through the process of completing the self-assessment and preparing for the country review. The peer review site visit was scheduled to be held in the first and third week of June.

### **5.1.3. Guiding HEIs taking the self-assessment and general challenges**

The process of completing the self-assessment by HEIs was generally smooth, according to the interviewee. The interviewee from WPZ research, received a few inquiries about the usage of the tool from the people leading the process in their HEIs. She strongly recommended that they would do a test run with the tool with a small number of people in order to gain better understanding of how it works, and how to manage the group function. Another piece of advice that was given to the HEIs regarding completing the self-assessment is to involve the leadership and the rectorate in the process. The reason for that is with the involvement of HEI leadership, the number of people participating would be higher, and the likelihood of the process to be completed is better. Despite these recommendations, a number of challenges appeared.

The biggest stumbling blocks regarding the completion of the HEInnovate self-assessment tool concerned data protection. The changes in the General Data Protection Regulations (GDPR) were making headlines by early 2018, even though they only came to effect in May of that year. The changes in the GDPR would add restrictions on how websites gather and use information from

users<sup>3</sup>. At that time HEInnovate self-assessment tool required users to register in order to take the self-assessment. Many HEIs contacted the WPZ Research team voicing their concerns regarding the GDPR, and the unnecessary requirement of having all users register using their names and email addresses in order to participate in the self-assessment. These concerns were communicated to the OECD and to Technopolis Group, which is the company that runs the tool. The HEInnovate website was updated later in May eliminating the need to register to take the assessment. The GDPR was the biggest issue that affected the willingness of HEIs to take the self-assessment tool, and a number of HEIs chose to wait until the website changes were enforced before taking the self-assessment. This has caused much delay in the process for many HEIs. Nevertheless, eight out of ten HEIs completed the self-assessment.

Another challenge was that a few HEIs were not able to collect responses from enough participants. These HEIs were concerned about the validity of these results in this case. The WPZ Research and the OECD informed HEIs that there is no “right” number of participants to make the self-assessment exercise reliable; that the self-assessment is for institutions to learn about themselves and that there are no “consequences” of having little participation.

## **5.2. HEIs’ Engagement with HEInnovate Self-Assessment Tool**

This section will illustrate what HEIs participating in this study did and the decisions they made while they engaged with the HEInnovate self-assessment tool. It is generally observed that the process that each HEI had for engaging with the self-assessment were diverse in nature. For this reason, the steps of the process of HEI is outlined individually below. The steps HEIs took to carry out the self-assessment will be linked and analyzed using the conceptual framework outlined in chapter two titled “Stages of Implementing Self-Assessment.”

All the institutions in this study participated in the country review and had a site visit by a team of experts from HEInnovate. Seven out of the nine universities completed the self-assessment in their institutions, while two have refused to take the self-assessment for different reasons. The views of the two HEIs that have refrained from engaging with the self-assessment are included in this study, as well as their alternative steps to prepare for the site visit.

### **5.2.1. Steps HEIs take to complete the assessment**

This section outlines in considerable details the steps and the outline each institution followed in their process of engaging with the self-assessment. It is dedicated to answer the first sub-question, “what are the steps HEIs take to understand and complete the self-assessment tool?” Details about HEIs’ motivation to engage with the process, as well as details on the roles of people leading the process of completing the self-assessment are elaborated on in this section. The purpose of this elaboration is to create a full picture of each HEI.

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<sup>3</sup> More information on GDPR can be found here: [https://ec.europa.eu/commission/priorities/justice-and-fundamental-rights/data-protection/2018-reform-eu-data-protection-rules\\_en](https://ec.europa.eu/commission/priorities/justice-and-fundamental-rights/data-protection/2018-reform-eu-data-protection-rules_en)

### **5.2.1.1. Higher education institution 1 (INS1)**

Two people were responsible for leading the process of completing the self-assessment in INS1. The first person (INS1a) is the Head of the Academic Institution of Development, who has worked in this organization development for the past 14 years. She is also the Honorary Head of the Association of Universities of Applied Sciences in Austria. The second person (INS1b) works in the economic development of the HEI and has a background in innovation and entrepreneurship. INS1a was invited in December 2017 to participate in an HEInnovate training in Brussels because of her position as an Honorary Head of the Association of Universities of Applied Sciences. In the training, she learned about the HEInnovate workshops and how to moderate them. Because of her participation in the Brussels' training, she was elected by university management to be the coordinator of the process of leading the completion of the self-assessment and preparing the HEI for the site visit. INS1a invited INS1b to work with her in this project because of his background in innovation as well as his experience in market research and analysis which could become an asset when it comes to handling the self-assessment tool.

INS1 had a few motivations to engage in the country review, and with the HEInnovate self-assessment. As Head of the Academic Institution of Development, INS1a has had a project for the past three years that involves finding trends for the future and describe it on a website making this information open data. This project illustrates vividly the fact that the future is going to be very different from what the present. INS1a used this as a foundation to motivate her institution to participate in the site visit and engage actively with the self-assessment tool, and the conversations that result from it. INS1a indeed said, *“we didn't start with HEInnovate; we started with a future.”*

*Steps INS1 has taken to complete the self-assessment:*

January:

After the Ministry's HEInnovate kickoff meeting, INS1 decided to participate in the HEInnovate country review, and elected INS1a to coordinate the process of taking the self-assessment and preparing for the site visit. The kickoff of the process inside INS1 took place during an annual meeting dedicated for discussing strategic topics for this HEI. The meeting included all heads of academic programs and departments. INS1a discussed the need for undergoing the self-assessment. She also communicated the plan for undertaking the process which takes half a year to complete. The original plan aimed at having from each department at least two heads of study programs, two teachers, and two students to engage in this process, and take the online self-assessment. However, the window of time for selecting these individuals was only one week, which was not enough time. Therefore, the plan was changed and everyone in INS1 was contacted via emails to invite them to participate in the workshops dedicated to inform participants about HEInnovate.

In this month, it can be observed that the first two stages from the “Stages to Implementing Self-Assessment” framework were taking place. Process leaders were selected who had strong motivations and goals for having the institution go through the self-assessment process. Commitment from leadership was secured by communicating the initial process plan, and the potential benefits that would be gained from the self-assessment. The first process plan was changed for a more feasible one, and the new plan was effectively communicated. Main form of communication at this stage was in person and to the leadership to secure their support and commitment.

February: INS1 is selected to be part of the HEInnovate country review. This month shows more steps taken in the planning stage (Stage 2) of the self-assessment to understand the needed resources, information and steps for the process. A small team from INS1 conducted trials of the self-assessment twice: one time without discussing actions INS1 does in the area of entrepreneurship and innovation; and another one after collecting actions and activities that INS1 does in the areas of entrepreneurship and innovation. The first attempt yielded poor results, and the second attempt had much better results. This showed INS1a and INS1b that discussing activities and actions in workshops intended for self-assessment participants is important.

March: Stage 3 of implementing self-assessment which deals with communicating the self-assessment plan and discriminating information about the tool can be seen in this month. Five workshops were organized and delivered to different groups of people to inform them about HEInnovate self-assessment tool. The duration of each workshop was three hours, and participants had to attend only one workshop out of five. 100 people attended the workshops. Time was a challenge at this stage as it was hard to find timeslots that suit most people. Some members of the leadership who were very supportive of the process became quite reluctant to attend a three-hour workshop, but all of them did so eventually. Another challenge was engaging students and have them attend the workshops, and later complete the self-assessment.

April: Stage 4 started by making the online self-assessment available shortly after the workshops ended in order to engage participants while they are still motivated and have fresh ideas from the workshops. The assessment was open for three weeks, which was enough time to complete this step. The link for the assessment was only sent to those who have attended one of the workshops in March. 50 people completed the assessment. There were some concerns raised regarding the tool not complying with the new GDPR. The process leaders resolved these concerns by communicating with participants and ensuring them that the collected data would never leave the HEI. Trust was established, and most participants completed the self-assessment without further issues.

May: Parts of Stage 5 and 6 can be seen in this month as seven workshops were organized and delivered. They were aimed for those who have completed the online self-assessment in order to share the results and the analysis. The workshops also included discussions on current actions

taking place in INS1, and discussions about topics that need to be raised with the expert team during the site visit. It was easier to fill in the second round of workshops because people were curious about the results and the outcome of the self-assessment.

June: Site visit.

**INS1 Facts and Figures:**

- Main process leader attended Brussels Training
- # process leaders: 2
- # people invited to self-assessment: 100
- # people completing self-assessment: 50
- Rate of value by process leaders: 8/10
- Would use the tool again?: Yes

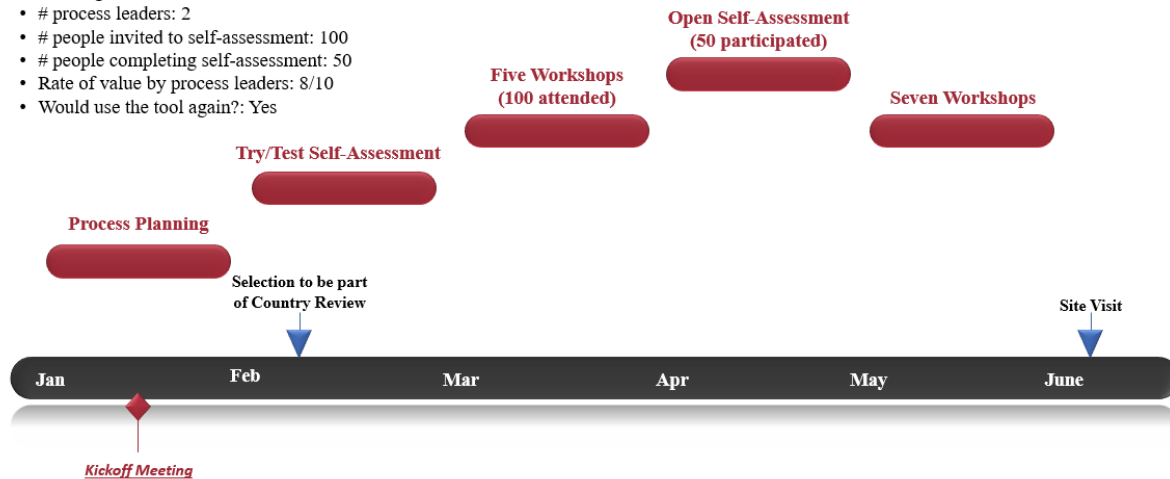


Figure 5: INS1 HEInnovate Self-Assessment Process Timeline

Overall, INS1 found the engagement with the self-assessment tool beneficial. When asked to rank the value of this exercise from 1 to 10, they gave it a score of 8. INS1 gained value from the self-assessment process primarily from the workshops conducted. INS1a said:

*“I think the most important thing about the online assessment is the engagement with the workshops and the communication around it. It’s not only about the self-assessment; it’s to think about the topics; to think about various questions; and then exchange your opinions with others... So, there was a big melting pot of different opinions.”*

INS1b said that the self-assessment tool helped him learn much about the organization and it provided much data on where the HEI strengths and weaknesses are regarding entrepreneurship and innovation specifically in the institution. INS1a added that the strengths and weaknesses they have across the organization are not limited to the ones that are revealed in the self-assessment. However, the self-assessment works as a “filter” to have a different perspective of the organization. “It forced us to have glasses on which we wouldn’t have put up,” INS1a said. This is another aspect of the self-assessment tool that makes it valuable for INS1.

A third element that made the self-assessment valuable was the discussions resulting from it which created streams of information sharing. This is not novel for the INS1 as different people



from different departments often meet, share information and work together. However, including external stakeholders and students in these meetings and discussions was new. This was particularly eye-opening especially for some lecturers who have learned through the discussions of certain activities that are taking place and the involvement of certain stakeholders in the institution. It is worth noting that INS1 was surprised to find out that external stakeholders and students gave higher ratings compared to the rest of the groups within the organization.

The discussions and the points raised in the process of engaging with the self-assessment is going to migrate to the strategic process where they plan to further develop the entrepreneurship agenda. The tool created a new perspective that brought new focus on moving forward with the HEI's strategy. INS1 considers taking the HEInnovate self-assessment again in one or two years to track changes.

Most of the components in the "Stages of Implementing Self-Assessment" framework were applied in INS1. Most notably, there was strong motivation and commitment through the process. This helped form and follow the set plan and resolve problems that they face throughout the process. Because the first four stages were implemented, the engagement rate was high, the data collected was beneficial, and the last two stages in the implementation process became feasible.

#### ***5.2.1.2. Higher education institution 2 (INS2)***

A team of experts were responsible for completing the self-assessment tool and preparing for the country review in INS2. The team coordinator (referred to as "the "process leader" hereafter) is the Executive Vice-President of the HEI and also the Head of the department of higher education research. She is responsible for the organizational development, quality management, higher education research, diversity management and didactics. Additionally, at the time of the site visit, she had the task of representing the universities of applied sciences sector in Austria as a whole. She is also a member of the steering committee of the ministry. The rest of the team consist of experts in the seven areas of the HEInnovate framework, with a particular focus on teaching and learning, research and development, transfer center for enterprise foundation, quality management, and alumni management. An additional key figure who was involved in the coordination of the HEInnovate preparation was the Assistant Manager of the Transfer Centre for Enterprise Foundation. Both the process leader and the Assistant Manager of the Transfer Center for Enterprise Foundation were interviewed for this study.

INS2 was first involved with HEInnovate when they were invited to the kickoff meeting at the Ministry. The process leader attended the meeting representing her institution and also the Association for the Austrian Universities of Applied Sciences. INS2 decided to participate in the HEInnovate site visit and the president delegated the project of leading the self-assessment and preparing for the site visit to the process leader. She then proceeded to create a project team that consisted of experts representing the seven criteria found in the HEInnovate framework. Experts

in the team organized sub-project teams in their competence fields so INS2 can identify its status and potentials.

INS2 leadership was motivated to participate in the country review because of its unique position, profile and history among HEIs in Austria. Their participation would bring their institution profile and activities under the spotlight. Additionally, they were looking forward to the opportunity of meeting the expert team during the site visit and receive their feedback.

*Steps that INS2 took to complete the self-assessment:*

January: INS2 was invited to attend the kickoff meeting at the ministry. The process leader informed the HEI president of the invitation to participate in the country review, and he decided to apply to participate in the HEInnovate site visit.

March and April: The process took place in these two months. Project teams and sub-project groups were formed. Additionally, an intranet platform was installed which included all relevant documents such as introduction of the project, description of the criteria of the HEInnovate framework, and updates about the process. INS2 employees, students and stakeholders had access to all these materials. The method they used to contact participants was the “snowball system” sending information and requesting for participation in the HEInnovate self-assessment using both top-down and horizontally. The HEI top management board, the deans, the heads of study programs, the administrative heads, the student bodies, certain external stakeholders, and friends of the HEI were contacted. 186 people completed the self-assessment. Throughout the process, the coordinator regularly reported and updated the HEI management board on the process in order to manage top-down and bottom-up information flow.

In these two months, the first four stages of “Stages of Implementing Self-Assessment” framework were implemented. Decision, commitment and support from leadership was very strong because the main process leader comes from the leadership board. The plan the process leaders chose is one that they have continuously implemented for similar processes, and which had proved effectiveness. Communicating the plan of the self-assessment process came in different forms but they were mostly personal and targeted because it followed the snowball sampling method. It is worth noting that this institution was hardly affected by the GDPR issues.

June: Site visit.

**INS2 Facts and Figures:**

- # process leaders: 2 people + expert team
- # people invited to self-assessment: not specified
- # people completing self-assessment: 186
- Rate of value by process leaders: 9/10
- Would use the tool again? Yes

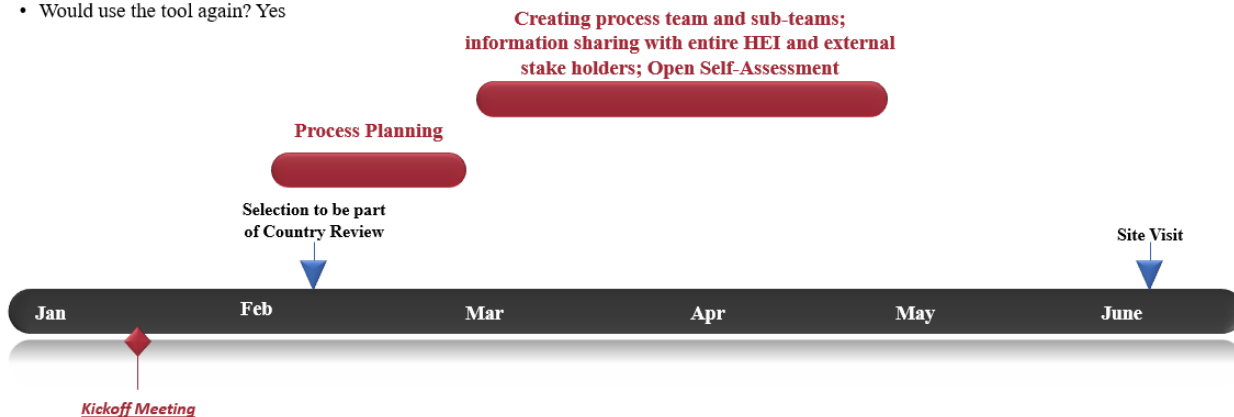


Figure 6: INS2 HEInnovate Self-Assessment Process Timeline

INS2 found the process of taking the self-assessment beneficial and ranked the exercise 9 out of 10 in terms of value. INS2 was already aware of its strengths and activities in the area of innovation and entrepreneurship, but the process brought new perspective to these activities, and has also contributed to the generation of new ideas, initiatives and more knowledge exchange. The process leader commented on the value by saying:

*“It was and is a very promising and interesting approach to look on [INS2] and their performances - let’s say: from a different point of view. And it helps especially [INS2] institutions to show, what the different governance approach for this certain sector facilitated: to develop a ‘new’ HE sector nearly as a kind of ‘grass root’ – every single [INS2] institution has made its ‘own’ way of positioning and providing certain (regional) needed study programs and additional higher education certificate programs.”*

INS2 plans to include the new perspective and ideas generated from the process in the mission and strategic measurement for 2030. This exercise *“helped broaden [INS2] sight on additional tasks and goals due to entrepreneurship in a modern innovative HEI.”* INS2 considers using the self-assessment tool again in the future because *“it is a great opportunity to change the lens on the HEIs and their performance.”*

INS2 planned and finished the process of the completing the self-assessment and preparing for the site visit in two months. The coordinator described the timeframe as “very ambitious,” but due to the many experiences the institution has from audits, they managed to achieve it. She notes that had they have two or three months more for preparing, they expect to have reached more internal and external stakeholders, spreading the aims and the goals found in the HEInnovate

framework. Nevertheless, she thinks that they have collected all the needed information, and the data gathered was sufficient.

The strategy of leading the completing the self-assessment was to organize the project from a representative of the HEI management board. This was crucial to demonstrate commitment of HEI to the process. Additionally, this representation was one of the drives to persuade people to cooperate and participate in the process. People in INS2 generally had two reactions to the process. On the one hand, there was a general deep interest and curiosity in both the process and the site visit. On the other hand, some people did not understand the benefit of this process, and it was thought to be just another “additional” obligation for the HEI in order to perform “adequately.” This was a misunderstanding, as INS2 volunteered to participate. Moreover, according to the process leader, the aims and goals of the HEInnovate were not clear enough for some people in the institution.

#### ***5.2.1.3. Higher education institution 3 (INS3)***

Two people were responsible for leading the process of completing the self-assessment tool and preparing INS3 for the HEInnovate site visit. The first person (INS3a) is the Head of the Transfer Center in the HEI. The mission of the transfer center is to make more people use the HEI as a pool of knowledge. This mission defines much of the activities INS3a does which include spread awareness about their activities and engage more people to become entrepreneurial. The second person (INS3b) is the Dean of the Transfer Center. He works in different projects, including one EU project. Additionally, he teaches in the HEI; does a lot of mentoring; maintains and expands the alumni network of the HEI; and builds postdoc society to improve PhD and postdoc entrepreneurship.

INS3b was familiar with the HEInnovate self-assessment previously through his work with an EU project that involved using this particular self-assessment tool. He quickly became interested in it. This was one of the reasons why he was eager to see how INS3 would do in the self-assessment. Both him and INS3a volunteered to lead the process as soon as they heard about the option to participate in the country review. They strongly encouraged the HEI rector to apply for this opportunity. The motivation for the strong interest of INS3a and INS3b was primarily in the knowledge and awareness that the self-assessment would bring about innovation and entrepreneurial activities in their institution. When the ministry sent an invitation to INS3 for the kickoff meeting, INS3b was recommended to attend this meeting because of his previous experience and knowledge of the HEInnovate framework and tool.

INS3a and INS3b elaborate deeper on their motivation for using the tool. To them, it is a way to spread the entrepreneurial spirit in the HEI by inspiring different actors and stakeholders to adapt an entrepreneurial mindset, and not be limited to linking it to finding companies and spinoffs. Another motivation is to raise awareness the institution about the services that Transfer Center in the HEI offers specifically, and the resources available in the institution as a whole. By having

everyone in the institution respond to the self-assessment, they can get exposed to this information in the process. Gaining information through the self-assessment on how different stakeholders rate entrepreneurial and innovative activities in the institution was extremely important and a big attraction to use the tool, but this motivation came secondary to the first two aspects that the tool would provide.

*Steps INS3 took to complete the self-assessment:*

January: INS3b attended the ministry's kickoff meeting and INS3 applied to participate in the country review. The first stage of the "Stages of Implementing Self-Assessment" framework took place as INS3 decided to participate in the self-assessment process and selected the process leaders who set goals for the process.

February: INS3 was waiting for confirmation from the ministry and more details about the site visit and its date.

March: INS3 was still waiting for the confirmation, but the process of planning to engage with the self-assessment started. Meanwhile, INS3a and INS3b learned more about the online self-assessment and the HEInnovate framework through the materials available on the website, which include information about the tool, the workshops, and best practice examples. INS3b ran some workshops with his team in order to familiarize them of the tool. They prepared the email format that they eventually sent out to everyone in the institution to fill in the self-assessment. Additionally, they created a separate homepage dedicated for sharing information and updates process of completing the self-assessment and provide information about the site visit. Because the team tested the self-assessment tool and provided feedback and suggestions on what should be included in the email sent to potential participants and further information provided in the new homepage, INS3a and INS3b did not receive any questions when the self-assessment was made live and available to everyone. The information provided had cleared up any possible uncertainties and confusions. In this month, the second stage of "Stages of Implementing Self-Assessment" was initiated. However, the self-assessment implementation plan was never confirmed because INS3 was waiting for confirmation from the Ministry.

April: INS3 decided to start preparing for the site visit and to do the online self-assessment. However, they received an email that they should not start with the self-assessment because issues were raised by other HEIs concerning the GDPR. The self-assessment process was halted again.

May and beginning of June: Stage 3 and 4 of the "Stages of Implementing Self-Assessment" took place. The self-assessment was open for two weeks. INS3a and INS3b contacted participants by email. This consisted of about all the students, 30,000; and staff members, 4,000. 50 people completed the self-assessment. Most of the 50 participants who completed the self-assessment were called personally by either INS3a or INS3b after sending out the emails. This was done to encourage more people to engage with the self-assessment. The original plan formed at the second

stage of the process was to contact in person and call as many people as possible to complete the self-assessment. In INS3b's experience, he found that this was the most effective way to motivate people to engage with the self-assessment. However, due to the limited time, this was not possible. Reminders were also sent to everyone in the organization to complete the self-assessment and remind participants of the deadline. INS3a also notes that May and June are difficult months for most people in the institution because students are usually busy with examination, and well as teachers. Therefore, even though emails were personalized to encourage people to participate, and there was general interest in what the online assessment, many people did not have time to do it within the window it was open for completion.

#### INS3 Facts and Figures:

- # process leaders: 2 + a team to try the tool
- # people invited to self-assessment: 34,000
- # people completing self-assessment: 50
- Rate of value by process leaders: 7/10
- Would use the tool again?: Yes

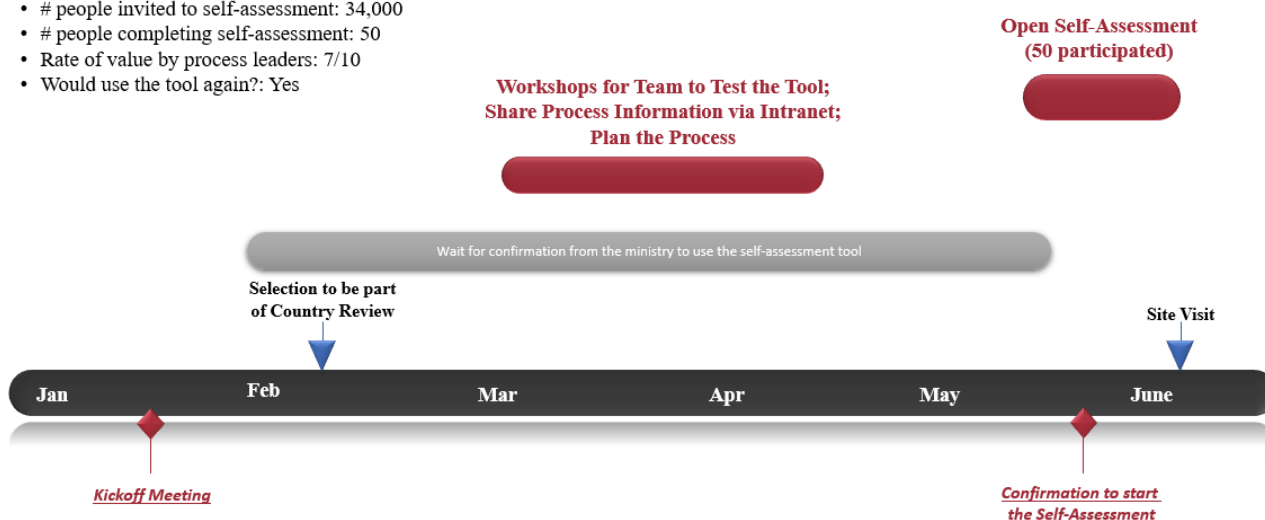


Figure 7: INS3 HEInnovate Self-Assessment Process Timeline

Despite the challenges faced during the process of engaging with the self-assessment, INS3 found the process generally very beneficial, and ranked it 7 out of 10 in terms of value. INS3a noted how the tool illustrates the broadness of the topic, and the necessary engagement of all stakeholders:

*“The tool is not only addressing questions like how the entrepreneurship education for students is; it's about the commitment from the university government. And I think these questions when you read them, you think, oh, there's more about it. It's not only about having some spinoffs. We also need the support from the government of the university. They have to be there. They have to kind of make it possible that we start new formats, make new events. [...] I think it is also good to know for students and the staff members of the university that the rector is in favor of this topic. [...] If they see that this is really an*

*important issue, I think this really helps. It's not about the one, two people who are supporting it. The whole institution has to have this vibe of: we want to be entrepreneurial."*

INS3a and INS3b do state that better and deeper engagement with the self-assessment tool that would include contacting people personally (as oppose to relying primarily on emails) and running workshops according to the HEInnovate guidelines would have yielded more meaningful results and information. Moreover, it would provide better opportunities to have different stakeholders in the HEI learn about services, activities and initiatives related to innovation and entrepreneurship. INS3 plans to engage in the self-assessment process again independent form the country review and do it through the workshops format where they have people from the institution volunteer to be part of it. Ideally, they hope that they would have people fill in the self-assessment on the location of the workshop, where all participants are gathered, so there would be more discussions and exchange of information and ideas. This setup is something that INS3b has seen in the HEIs that have taken the HEInnovate self-assessment.

In the area of learning from the self-assessment, INS3 did not have any big revelations, as they had a clear idea of their strengths and shortcomings. Nevertheless, it was interesting for them to observe how different stakeholders rank their activities. They noted that there is a correlation between higher rating for HEI activities and the period of time a stakeholder has been in the institution. To illustrate, they have noted that postdoc students have higher ratings than PhD students, who have higher ratings than regular students.

One of the main challenges they faced was to attract people to participate in the self-assessment. They initially thought that having the OECD associated with the process would attract more people and more attention, but that was not the case. INS3a thought that this can be due to the many surveys the institution continuously run, so it was quite the challenge to try to make this particular self-assessment stand out and motivate people to take it. She thought that using the workshop format would have been more effective in terms of attracting more participants and generating more interest in the process. Interestingly, even though INS3 leadership were deeply interested in the self-assessment and the site visit, they were not deeply engaged in the process. INS3a is almost certain that some members of the top management did not complete the self-assessment, and the rector did not initiate any discussions around the self-assessment nor recommend a list of certain individuals who should participate in the process or take the self-assessment. INS3a thought that this is most probably due to their busy schedules and their set of priorities at that time. Moreover, as stated previously, the timing of conducting the self-assessment was not ideal for most people in the institution.

They found the self-assessment questions or statements were self-explanatory at first glance, however, interpreting the results can become challenging. INS3a elaborated on analysis of the statement ratings by saying:

*“If someone says it [statement rated] is 5, then it is good results. But if someone says 1, we could not find out why. If they say 1 because they don't know what they offer? Or they said 1 because they think the service is not good. So maybe a student took it and didn't like it, so they said only 1, or the student is from the humanity and doesn't know that the course even exists, and then says there is no such service and also gives 1”*

INS3b noted that even though the self-assessment is not meant to be a benchmarking tool, he would have found it useful for the results analysis to compare their results with other HEIs. His involvement with the previous EU project that used HEInnovate self-assessment has given him the opportunity to become exposed to the self-assessment results of seven different HEIs, and that, he said, was helpful in terms of analyzing their own results in their institution. Because of this exposure, they were able to understand what “good” or “bad” results are.

Looking at the self-assessment process from the perspective of the “Stages of Implementing Self-Assessment,” it can be observed that the many interruptions, and trouble shootings that appeared during Stage 3 of communicating the self-assessment plan, and Stage 4 of executing the self-assessment had major effects on the process. Even though the process leaders perceive high value from the process, they think that in order to have meaningful results and discussions, the entire process should be repeated again using a different timeline and plan. In this case, the method of communicating the self-assessment plan should be changed significantly in order to yield deeper engagement from participants.

#### **5.2.1.4. Higher education institution 4 (INS4)**

One person was responsible for leading the process of completing the self-assessment tool and preparing the institution for the site visit. She had been working as the Assistant Academic Council for two and half years in INS4 when she received the task of leading this process. When the opportunity to participate in the HEInnovate country review opened, the rector approached her and asked her if she would be interested in leading the process. Afterwards, she went to the HEInnovate training for trainers workshop in Brussels. She also attended the kickoff meeting at the Ministry.

The motivation for INS4 to take the HEInnovate self-assessment was mainly to participate in the country review. This institution was one that the ministry thought should participate because they can demonstrate what they do in terms of innovation and entrepreneurship since they are close to these topics. However, the rector and the rector's office also found that this process would give an opportunity to open discussions on how the HEI is doing in the field of entrepreneurship and innovation. The rector was active in throughout the process in communicating with people participating and conveyed the potential benefits and learning opportunities that can happen as a result of engaging in the self-assessment and the country review.

#### *Actions INS4 took to complete the self-assessment:*

January: the leader of the process in INS4 attended the kickoff meeting in the Ministry.



April: INS4 made the decision to participate in the country review. She approached the process leader and asked her if she would be able to coordinate the process. She replied that she can and is ready for the undertaking. The Rector's Council suggested a list of 15 names that should fill in the self-assessment. They also mentioned that the more people take the assessment the better. The leader of the process contacted people outside the list. Her choices were based on the information she learned from the workshop and training in Brussels. Thus, she involved the entrepreneurial center and a number of students and alumni. When the entrepreneurial center heard about the self-assessment and the process, they suggested other names to include in the list and in the process. The final list consisted of 31 people, and included some heads, deans, people from the entrepreneurship center, the head of the institute of strategy and innovation, students, and alumni. The only perspective that was not included was that of external stakeholders. The leader of the process realizes the importance of this perspective, however, given the timeframe that INS4 had to complete the self-assessment and prepare for the site visit, it was not possible to reach out to this group. In this month, the first two stages of the "Stages of Implementing Self-Assessment" were taken. Commitment from leadership was strong because the rector was deeply involved in the process and motivated to undergoing it. Additionally, the plan created by the process leader was feasible given the timeframe and resources available.

May: Stages 3 and 4 took place in this month. Emails were sent to the list of selected participants informing them about the process and providing them with the link to the self-assessment. As predicted, they were interested in the process and willing to cooperate. It is worth noting that the leader of the process did not use her own email to contact the participants but used the that of the rector's. The self-assessment was open for four weeks. In these four weeks, many people contacted her via email or phone asking for clarifications on some points in the self-assessment. Many questions expressed curiosity about the self-assessment and the motivation behind taking it:

*"Some people actually called and asked, 'I'm not sure, I'm not so sure what's the background, why are we doing this?' I mean faculty specially, they asked why. [...] 'Why are we doing this?' [...] 'what's the goal behind that?' So those were questions that came to me, and also to the rector."*

The process leader sent reminders to participants a few days before closing the self-assessment asking them if they have any questions or need any assistance. Eventually, everyone who was contacted to complete the self-assessment did so.

June: The site visit took place. The process leader notes that the visit of the experts was valuable, however, having most people taking the self-assessment sit in one place and talk was very beneficial in itself:

*"We have to know what we actually have because we have so much going on in this field [entrepreneurship and innovation]. We have this institute we have an entrepreneurship*

center' we have a lot of people doing research on this topic, as well as teaching it, so in [INS4] there's a lot going on. That's what was missing right now is bringing them all together. It's like parts are there and parts are in there and there and there. [...] For that, I think it was quite good that it had all of them at one table talking together about this topic. And of course, they have all different perspectives [...] It's a different approach but I think it's beneficial if you put them together and just let them talk. [...] The tool is a way to coordinate or open up discussions on these topics. So basically, go through the tool and then sit them [different stakeholders] together and have them talk about the results."

#### INS4 Facts and Figures:

- Main process leader attended Brussels Training
- # process leaders: 1
- # people invited to self-assessment: 31
- # people completing self-assessment: 31
- Rate of value by process leaders: 8/10
- Would use the tool again?: Possibly

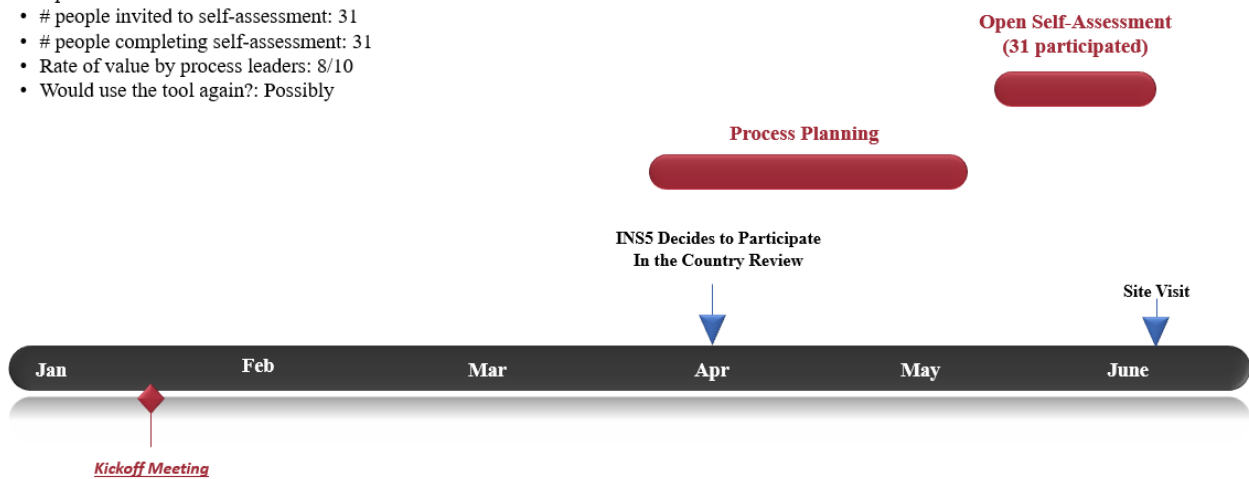


Figure 8: INS4 HEInnovate Self-Assessment Process Timeline

The process leader thought that the exercise of engaging with the HEInnovate self-assessment was valuable in different degrees to different stakeholders in the institutions. The self-assessment was quite valuable for the rector's office, which is the process initiator, and for them they may rate the value of the process 8 out of 10. This high value comes from the opportunity the tool gave for the rector's office to see all the activities that happen in INS4 as a whole package. They saw how many people are actually engaged with the topics of HEInnovate framework, and the way the activities link to each other. As for the faculty and staff, the exercise was an opportunity for them to present what they already do. They may have learned new information about other activities in the institution. However, the process leader thinks that if they were to rate the exercise, they would give it 4 or 5 out of 10. The group of students and alumni found the exercise quite valuable because they learned much information about the institution that they were not aware of. Thus, according

to the process leader, the perspective of the people or groups taking the self-assessment varies and therefore its value.

The process leader was not sure if the discussions that started around the self-assessment would continue after the site visit ended. This all depends on the rector's council, as this type of decision is not in her hands. However, she sees value in taking the conversations further because this was the first time INS4 brings these people together and have them discuss these topics.

INS4 knew its strengths well, so the self-assessment confirmed what they already knew about their areas of strength. However, they were surprised to find that the Measuring Impact dimension was ranked relatively low compared to the other dimensions, despite the activities and initiatives being done in this area. From the HEI leadership perspective, INS4 has been covering this aspect well. Nevertheless, it appeared that faculty and students particularly see otherwise. This was a surprising revelation, and it was useful to discuss that piece of results and explore what might be missing.

The leader of the process thought that more time was needed in order to engage better with the self-assessment. She would have used this time to meet people before the self-assessment is made available, give them a presentation on what it is, discuss the reasons for taking it, discuss possible outcomes and how to react to them, and address the questions they would have had.

It is notable that the process leader and INS4 chose not to contact a big number of individuals, but rather focused on a few selected ones whom they thought had the most involvement with the topics in HEInnovate framework. The result is that all the people contacted to complete the self-assessment were deeply engaged and interested in the process, and all of them completed the self-assessment. The high rate of completion and involvement can also be attributed to the rector's commitment to the process. She was active at contacting people, convincing them with its importance, and motivating them to be involved.

It can be said that the process of implementing the self-assessment in INS4 met its expected goals. Looking at it from the perspective of the "Stages of Implementing Self-Assessment" framework, this institution applied most of its stages. As mentioned above, Stage 1 was characterized by strong motivation to undergo the assessment because of the high interest of the leadership, who were supportive throughout the process. Stage 2 brought a point of strength in the process because a feasible plan was set based on the goals and motivation of the process, as well as the time and resources available. Stage 3 relied on emails for communications. Nevertheless, the rector was actively promoting the process and encouraging participants to complete the self-assessment, and the process leader was in touch of many of the participants via email and phone. The process value was highly ranked from the leadership perspective because it had met the its preset goals. Stage 5, which includes sharing results and discussing strengths, weaknesses and lesson learned, happened almost organically through this process because of the high interest of

participants in the topic, and their deep engagement with the self-assessment tool. However, it is unknown if Stage 6 would ever take place.

#### **5.2.1.5. Higher education institution 5 (INS5)**

One person was responsible for leading the process of engaging INS5 with the HEInnovate self-assessment and coordinating the preparation for the site visit. She is the assistant of the Chancellor and the Rector. She provides administrative support to the Chancellor and the Rector in their daily activities. Additionally, she is involved in many projects that the Chancellor is responsible for, as well as the strategic work at the HEI.

One of INS5 motivations to take the self-assessment is to participate in the country review. Participating in the country review would bring INS5 more to the attention of the Ministry. This is valuable for this institution as it relatively a young one. There are, naturally, other motivations that include exploring impact of their activities in the institution and their region and attempt to strengthen what they do. Additionally, participating in the country review and taking the self-assessment would open up an opportunity for INS5 to receive feedback from international experts on the status quo and how they can progress in this field.

#### *Steps INS5 to engage with the HEInnovate self-assessment:*

January: A person who works in the department of fundraising and communication at INS5 took part in the kickoff meeting at the Ministry in January. This HEI was invited to participate in the country review by the Ministry, and they accepted the invitation. INS5 started looking for a person or a department to take up the responsibility of arranging the self-assessment process and prepare the institution for the site visit. They first went to the Institute for Clinical Innovation, because they are responsible for the system of entrepreneurship at INS5. However, they could not accept to take up this responsibility because of their business at this time with other tasks, which would make it challenging for them to find the time and capacity to lead this process. At this point, INS5 was considering withdrawing from participating from the country review, but the current process leader decided to take up the responsibility for the whole process. Two main reasons drove her to take up this task. First, she was curious about the topics and about the process itself, and second, she thought that there was much potential for INS5 to follow the topics included in the HEInnovate framework, and to build up a structure in the fields of innovation and entrepreneurship. On this month Stage 1 of implementing the self-assessment started with an initial commitment from leadership to the process. Even though there were challenges finding a process leader to be responsible for the process, one stepped in who seemed to have interest in it. The interest of the process leader in the self-assessment and the site visit gave the process an additional boost when combined with the leadership commitment.

April: Stage 2 of the process started by setting a plan for engaging INS5 with the self-assessment. She first familiarized herself with the self-assessment tool by reading the materials available on

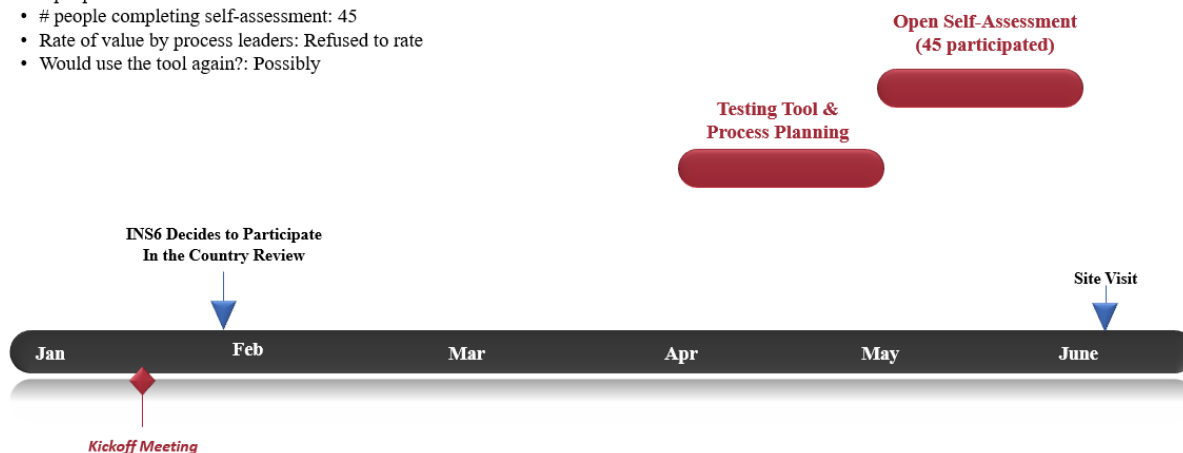
the HEInnovate website. Afterwards she completed the self-assessment to try it. She also chose two or three other people and invited them to do the self-assessment using the group function. She took their feedback to create necessary instructions to send out to everyone participating in the self-assessment.

May: Stages 3 and 4 took place in this month. The process leader sent emails to potential participants to invite them to complete the self-assessment. The self-assessment was made available for the whole month of May. The emails included a brief introduction about HEInnovate and the reasons why INS5 would like people to participate in it. The process leader sent these emails and did all correspondence related to the self-assessment in the name of the HEI leadership. Emails were the main mean of communicating the self-assessment to participants. The emails were sent to about 340 people, including the HEI leaders, the deans, all employees under university payroll, a few selected external stakeholders, all PhD students, and some students from other levels. 45 people completed the self-assessment. During this month, the process leader was available to answer any questions participant had. She received a number of calls and emails with questions, most of which wondered why they had to register to access the self-assessment. The process leader tried to motivate them to register and complete the self-assessment. She also sent formal reminders one or two weeks before the deadline.

June: The site visit took place. It is worth noting that no formal discussions about the results of the self-assessment happened. INS5 was rather waiting for the report written by the expert team that visited the institution in order to meet and have a discussion on the topics raised by the self-assessment and the site visit.

**INS5 Facts and Figures:**

- # process leaders: 1
- # people invited to self-assessment: 340
- # people completing self-assessment: 45
- Rate of value by process leaders: Refused to rate
- Would use the tool again?: Possibly



*Figure 9: INS5 HEInnovate Self-Assessment Process Timeline*

In terms of learning from the self-assessment, the process leader said that the results did not reveal any information that they did not previously know about. They, as an institution, are conscious about the position of the university in the context of the topics of innovation and entrepreneurship. However, it was the first time for them to see the potential they have in some of the areas. This they find useful because they are at the beginning stages of building an entrepreneurial agenda to become an entrepreneurial institution, which involves creating new ideas, and to involve these into the institution's strategy. There was an added value to "seeing" what INS5 already knows as the process leader puts it:

*"When you see the result [of the self-assessment], you are more confronted and more conscious about what you already know, maybe what you already feel, what you already heard. But as soon as you see the results it's confirmed. [...] It comes much, much stronger into minds and builds up a stronger picture about the current situation; about possibilities; about strengths; about weakness, or potentials... let's say potentials. It makes it very clear in a very easy way because the self-assessment with the statements and the examples are very clear."*

As for the value of the exercise, the process leader thinks it is hard to estimate its value at this point. Time and future actions based on what they saw in the self-assessment results, and what they have learned from it and the site visit would determine its value. However, she describes it as valuable overall as it was *"a strong mind opener."*

The timeframe of planning the process of the self-assessment was about two months for INS5. The process leader found this time adequate for doing such an exercise. The process leader justifies the relatively low rate of completion of the self-assessment was possibly due to the fact that this institution had undertaken another survey just before the HEInnovate self-assessment was made available.

The process leader found challenges in motivating people to engage with the self-assessment. This is mostly due the timing of the process as the whole institution had recently undergone another survey. She also found that some students started but did not complete the self-assessment. She suspects that this is due to their lack of understanding or information needed to complete some sections in the self-assessment. The process leader tried to motivate students to answer by focusing only on specific dimensions that relevant to them such as the "Entrepreneurial Teaching and Learning," and "Knowledge Exchange and Collaboration."

Another challenge was participants not wanting to register in order to be able to participate in the self-assessment. Before the HEInnovate website changed in order to comply with the updated GDPR, registration was mandatory for all participants in order to access the self-assessment.

#### **5.2.1.6. Higher education institution 6 (INS6)**

One person was responsible for leading the process of taking the HEInnovate self-assessment and prepare INS6 for the site visit. She works as the Head of the Office for Quality Management and Teaching Enhancement at the institution. Thus, her role is linked to continuously communicating with study course directors, as well as running the quality management system in the HEI. The rector of INS6 selected her to be the process leader to coordinate the self-assessment completion and the preparation of the HEI for the site visit.

The motivation to engage with the HEInnovate self-assessment came mainly from the rector who thought that the topics that appear within the HEInnovate framework are relevant to the work and activities done in INS6, and there is potential to learn about themselves through their engagement with the tool, as well as receiving feedback from the expert team at the site visit.

*Actions INS6 took to engage with the HEInnovate self-assessment:*

January: The rector of INS6 attended the kickoff meeting at the Ministry and found the topic interesting. He asked the Head of the Office of Quality Management and Teaching Enhancement if she would like to lead the process, and she accepted. The rector wrote a letter to the Ministry to apply to have INS6 become part of the country review, and they were selected in April. At this stage, strong commitment from the leadership can be observed.

April: After acceptance, the process leader waited for further instructions from the Ministry. Meanwhile, she familiarized herself with the tool and the HEInnovate framework by reading the manual available on the website, and also watching the starter videos about the tool usage and the group function. She also introduced HEInnovate in the biweekly meeting between the rectorate and the deans of the HEI. The rector voiced his interest and support to the process of engaging with it, especially because it is part of the strategy of the HEI. The rector also encouraged the deans to engage with the HEInnovate self-assessment by filling it in and informing the members of their faculty about it. Here there is an extension of Stage 1 where commitment to the process is reaffirmed. A plan for engaging INS6 with the self-assessment had been outlined, but because the institution decided to wait for further instructions from the Ministry, it was not pushed forward.

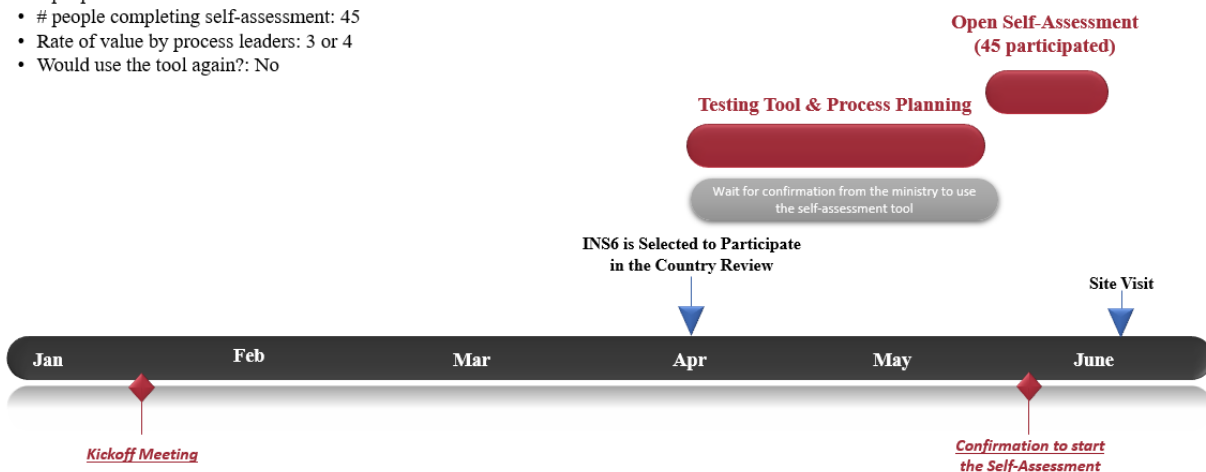
May: In the beginning of May, she received information that they can start using the self-assessment. However, a few days later, she received information that there were problems with the tool because it did not fulfill the GDPR. She decided to halt the process until these issues are solved, which happened by the end of May. This caused significant delays in Stage 2 and Stage 3. Eventually, the process leader sent out the link of the self-assessment and kept it open for three weeks. The link was sent by email which introduced the HEInnovate self-assessment and the reasons why they decide to engage with it, and participate in the country review. The purpose of this email was mainly to motivate people to use the tool and complete it. This email was sent to approximately 300 internal stakeholders including the professors, researchers, study course

directors, and heads of the administrative unit. She also sent another email to all the HEI students. 45 people completed the self-assessment. It is important to note here that the main means of communication with the self-assessment participants was through emails.

June: The process leader had the self-assessment tool stay open in the beginning of June. She sent a reminder to people invited to complete the self-assessment before the deadline approached. After the site visit, the process leader had a discussion with the rectorate about the results of the self-assessment and the input the team of experts gave during the site visit. This discussion can fall under Stage 5 of implementing the self-assessment, where strengths, weaknesses and lesson learned were identified and discussed. Stage 6 of creating and implementing an action plan did not seem to have the potential of taking place in INS6 as a result of the self-assessment.

**INS6 Facts and Figures:**

- # process leaders: 1
- # people invited to self-assessment: 300 +students
- # people completing self-assessment: 45
- Rate of value by process leaders: 3 or 4
- Would use the tool again?: No



*Figure 10: INS6 HEInnovate Self-Assessment Process Timeline*

Regarding the value of the process of engaging with the self-assessment, the process leader ranked its value 4 out of 10. The self-assessment did not reveal any new information to INS6 regarding their perception on their activities related to the topics of innovation and entrepreneurship. However, one surprising revelation was that their students generally gave INS6 rather high scores, especially in the area of “Measuring Impact.” This was a positive feedback on the work that they do and how it is perceived by this group. Nevertheless, the HEInnovate self-assessment results were expected and predictable. This is largely due to the fact that INS6 runs numerous other assessments that provide them with input in the area of innovation and entrepreneurship. When asked if INS6 would consider engaging with the HEInnovate self-assessment again, the process leader said that it is unlikely that they would. She mentions that if they were to use it again, it should be done differently to gain more value:



*“If one really wants to use it and get advantages of the scores, I think one should use it in the typical way of a self-assessment done as a way of QM model should be done: to follow the form groups, a group of professors, a group of students, a group of the rectorate, the deans, etc. Then discuss it, look at the questions, discuss and then score all together. Then you have these interactions, and maybe you get a real take away from it because you take time to talk about it. I only use it as a questionnaire... it's just interesting. [...] to use as a basis for the decisions... it is too weak because we don't know the statistical relevance of it.”*

The self-assessment was generally clear and user-intuitive to both the process leader, and to those who participated in the self-assessment. The process leader found the material available online, including the short videos, were sufficient to provide adequate information to start the process. After opening the self-assessment, the process leader hardly received any questions from those participating in it, and the window of time provided to complete the self-assessment was enough. However, she noticed that many people started the self-assessment but did not complete it. She attributes this to the length of the self-assessment. When participants are thoughtful of each statement presented in the self-assessment and weigh their ratings carefully, the assessment can take a long time. She noticed that the number of people completing the self-assessment increased after sending a reminder to the participants. Additionally, she was considering contacting specific people who have not completed the self-assessment in order to motivate them to do so, but she changed her mind:

*“The assessment is rather long. [...] This might be the reason I've seen the group managing function, that some people registered but didn't finish. So, I can understand them, but I think it was their decision not to finish. Somehow, I think I should have contacted them and ask them [to complete the assessment], and then I decided not to do it, because if I'm thinking about myself, if I have decided to stop, I decided.”*

The process leader did not find the results analysis provided by the HEInnovate self-assessment enough to reach an understanding for the meaning of the results:

*“This is the problem of the tool [...] because you're not able to do anything with the statistics analysis. I do have the pictures [referring to the diagrams visualizing the results], nice, but I do not have the chance to look at the statistic design, and the significance of that.”*

The process leader said that it is very unlikely that the institution would consider taking the HEInnovate self-assessment again as it did not add much to what they already know.

#### **5.2.1.7. Higher education institution 7 (INS7)**

One person was responsible for leading the process of completing the self-assessment and prepare INS7 for the site visit. She is the Assistant of the Vice Rector of Academic Affairs. She is

also the coordinator of a higher education project called Education 2020. She was selected by the rectorate to attend the kickoff meeting at the Ministry, and later to coordinate the process of preparing for the site visit and completing the self-assessment. It is worth noting that even though the process leader in INS7 planned and made decisions regarding the institution engagement on her own, she did have many conversations and discussions with one of the entrepreneurship professors in the institution. These discussions were important when they came to understand the self-assessment tool and making decisions.

The motivation to participate in the process of engaging with the HEInnovate self-assessment and the country review was primarily because the Ministry hoped that INS7 would be part of the country review. INS7 is active in the field of innovation and entrepreneurship as well as the startup scene, and it can become a good example to represent Austrian higher education in regard to these activities. Additionally, INS7 were deeply interested in receiving feedback from their internal and external stakeholders through the self-assessment in order to improve in this field.

*Actions INS7 took to engage with the HEInnovate self-assessment:*

January: the process leader attended the kickoff meeting at the Ministry. INS7 was immediately interested in participating, so they applied to become one of the HEIs participating in the country review. She was almost certain that her institution was going to be one of the selected HEIs to participate because she heard from the leader of the steering group that the Ministry was interested in including them.

April: INS7 received an official answer to their application in January and were informed that they are one of the selected HEIs to participate in the country review. Receiving the reply in April left INS7 with two months to take the self-assessment and prepare for the site visit. The ministry had also asked if it were possible to include all partner universities to this institution at the country review and have INS7 coordinate the whole process. INS7 took up this task, and the process leader described the preparation for the site visit in one month to be difficult. As for the self-assessment, the process leader dedicated one month to engage INS7 with it. She waited until she received a confirmation that their institution was going to participate in the site visit, and afterwards she had to wait again after hearing that there were issues in the self-assessment because it did not comply with the new GDPR.

May: The self-assessment opened and was made available for two weeks. Given the tight timeframe, the process leader did not do workshops to the groups that would participate in the self-assessment. She emailed the link directly to target groups which included the leading staff, the rectorate, the senate, the deans of studies, a group of administrative staff members, teaching staff members, all students in INS7, and some external stakeholders. They especially focused on student union and representatives. In total emails were sent to almost 2,000 teachers, more than 70,000 students, more than 100 administrative staff members, and 60 external stakeholders. Because of

the requirement to register in order to access the self-assessment, the process leader thinks that many people declined to participate. The process leader considered advertising the self-assessment tool on social media and by using posters on campus, but she decided against it in the end because the tool at the time did not comply with the GDPR, and she saw that the self-assessment was too long to go through. In the end, less than 200 people registered for the self-assessment, and only 23 people completed it. In the window of time when the self-assessment was open, the process leader received many calls and emails with questions regarding the tool. The questions were mostly about the purpose of this self-assessment and questions expressing concern about the GDPR. There was also some feedback from participants saying that the ranking of statements in the self-assessment from 1 to 5 was not clear. Additionally, the German translation of the statements in the tool was not complete or accurate in some areas of the self-assessment.

June: Site visit.

It can be noted that in this institution, the first four stages of implementing the self-assessment happened very quickly. This led to missing a few elements that could have made the engagement with the tool deeper. There was not enough time to establish commitment to the process and to outline goals from it. The process leader could not create an elaborate plan because of the limited time available. Moreover, she did not follow the plan she originally set because of the emergence of the GDPR issues. She used email as a main mean of communicating the self-assessment to the participants and was actively answering any immerging enquiries. The engagement of INS7 with the self-assessment tool was not deep, and the number of participants cannot be considered representative.

#### INS7 Facts and Figures:

- # process leaders: 1
- # people invited to self-assessment: more than 72,160
- # people completing self-assessment: 23
- Rate of value by process leaders: 4
- Would use the tool again?: Possibly

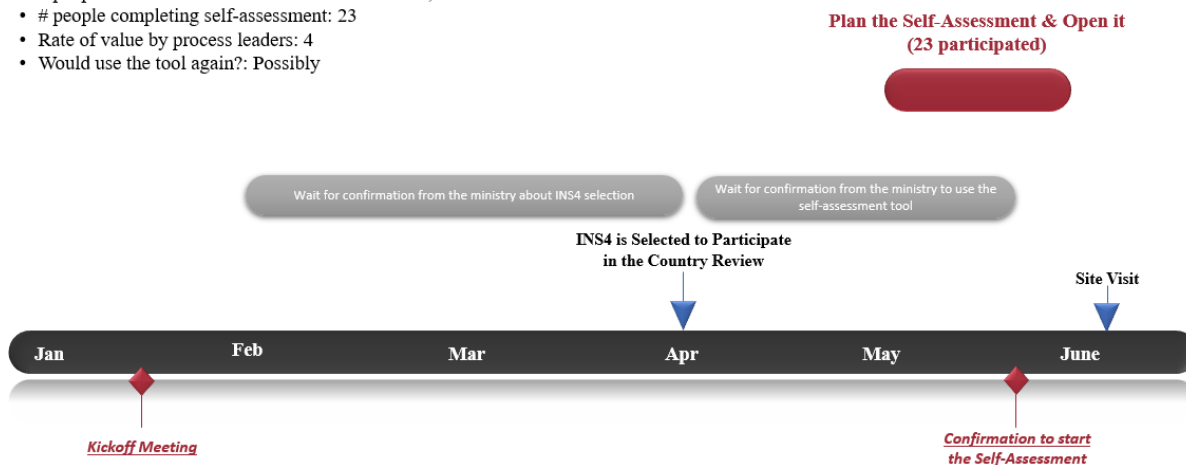


Figure 11: INS7 HEInnovate Self-Assessment Process Timeline

INS7 is one of the institutions that were deeply affected by the changes happening regarding the GDPR. Had these changes come before the country review process started, the course of action and planning from the process leader of this institution would have been entirely different.

Because the ministry's official selection came in April, and more delays occurred because of the GDPR, the process leader did not have time to do any workshops before opening the self-assessment. Had she had more time, she would have planned the self-assessment process to include workshops. She thinks that the duration of time needed to complete the self-assessment by individuals would have been much shorter had they attended a workshop on the tool before they take it. Moreover, she would have had the opportunity to discuss with the participants what the dimensions of HEInnovate and the statements mean for them as an institution, or even on the departmental level. The process leader commented on the way many of the statements are not self-explanatory and require participants to read several examples provided by the tool in order to understand what is meant by them. The problem of reliance on the few examples given for every statement is that, sometimes, none of the examples fit or match the activities the HEI or a department is doing, which may lead self-assessment takers to rank the statements low even though they should be ranked higher.

The process leader thought that the self-assessment would give more insights if it were done by separating departments into different groups to take the assessment and analyze the different results and what they may mean. However, this idea did not materialize because of the limited time INS7 had to carry out the self-assessment:

*"We wanted to get this [self-assessment] feedback at the department level: mathematics, and chemistry, and so on. We have seven faculties, departments. [...] it is different, the appreciation of entrepreneurship for mathematics than it is for the architects. But for that we did not have enough time because for that you have to make separate groups."*

The process leader thought that it would have been useful if there was workshop dedicated for selected members from universities participating in the country review in order to inform and train process leaders in these institutions about the self-assessment tool. She found that the information provided on the HEInnovate website was not enough for her to create a proper plan to engage her HEI with the self-assessment.

Even though the participating group in the self-assessment was very low, the results reflected the actual state and attitudes in INS7. There were no any unexpected results. Their areas of strengths as well as their areas that can be improved were reflected in the self-assessment results. This was interesting for the process leader to see because it showed that on the one hand, INS7 knows its strengths, weaknesses and limitations in this field, and on the other hand, it showed that the attitudes towards entrepreneurship and innovation in INS7 are on the right track, and the impressions external stakeholders have align with what the institution hope they would be.

When asked to rank the value of the process of engaging with the self-assessment, the process leader rated it 4 out of 10. The self-assessment in its current form did not provide new information or data to INS7 that would be useful for them to use in future planning. The statements in the self-assessment, as well as the explanation provided for them can be misleading to some participants, making it not suitable for the institution. Most importantly, there was not enough time to engage with the self-assessment properly. These factors lead to the lower ranking. However, the process leader did not give it the lowest ranking because she did learn much from the engaging with the process:

*“Even if the tool is not suitable for us, it helped us to think about topics, and maybe later on if we use such kind of tool, we have the experience of how it should not be done. So, I rate it at 4 because we learned a lot.”*

#### **5.2.1.8. Higher education institution 8 (INS8)**

INS8 is one of two institutions participating in the country review that decided not to engage with the HEInnovate self-assessment. Two people were responsible for leading the process of preparing INS8 for the site visit. Both of them work at the Unit of Quality Enhancement of the HEI. One is the Quality Enhancement Expert and Quality Researcher at this HEI (INS8a), and the other is the Head of the Quality Enhancement Unit (INS8b). For this study, the former was interviewed. In his role he is responsible for quality assurance and quality enhancement. Within quality enhancement, he has a research role where he would carry out research, accompany processes, and write texts. On the practical aspects, he does peer reviews of all departments structures, and he would call and organize these processes.

INS8a was part of the Austrian expert team that wrote the background report. Therefore, his involvement with HEInnovate began in November 2017. Additionally, there was a meeting in the ministry in February 2018 between the Austrian expert team, and the experts from the OECD. In this meeting, the INS8a spoke to an OECD member telling her about a specific and unique study program in INS8. She found the program interesting and relevant to HEInnovate framework. Therefore, she invited him to present information about this program in a conference in Brussels that was taking place in late February or early March. Thus, INS8a had two angles for participating in the HEInnovate process: one being part of the expert team writing the background report, and the other one is communicating to the OECD about a specific study program running in INS8, in addition to his role of leading the process of preparing INS8 for the site visit. His direct engagement with the OECD team responsible for HEInnovate has influenced his understanding of the self-assessment tool, and of the HEInnovate framework as he relied much more on the information understood from conversations he had with the OECD expert than on the materials available on the HEInnovate website.

INS8a became interested in the country review, so he brought the idea to INS8 by speaking first with INS8b and afterwards the rector. Both saw potential value in participating in the process,

and the rector agreed that INS8 should participate. The participation of INS8 in the HEInnovate country review was seen as part of the domain of the quality enhancement in the institution, therefore the task of coordinating it was given to this unit. Adding to that the fact that INS8a was the one bringing the process to the HEI, he was seen as one of the key people responsible for it.

Because of his involvement in writing the background report, INS8a was directly in touch with other institutions that had decided to participate in the country review. He saw the plans and the steps these institutions were taking in preparation for the site visit, as well as their different interpretations of the self-assessment tool.

The internal decision of whether INS8 should participate in the country review was made in March or April. This created concerns of whether there is enough time to set up the process to undertake the self-assessment. After the decision of participating was made, the process leaders started to enquire about the experts who would be visiting INS8 in the site visit. They were provided three names by the WPZ Research. After checking the backgrounds of these three people, the process leaders found that the focus was on the economic side of entrepreneurship. This caused some setbacks because this type of focus did not match what INS8 vision or actions as it had a broader understanding of innovation and entrepreneurship.

After this revelation, INS8 was considering withdrawing from participating in the site visit. INS8a discussed this decision with WPZ Research, who are responsible for the practical aspects of coordinating the site visits in Austria. They reached an agreement that INS8 would participate in the site visit, but would do so without engaging with the self-assessment tool, and for the purpose of sharing with the visiting experts their activities and vision of innovation and entrepreneurship which follow a broader understanding of these concepts. The group of experts that wound up visiting INS8 were a larger group and had a broader setup which examined entrepreneurial and innovative aspects from various angles. INS8a thinks that had they known this, they might have had a different course of action, and they might have considered taking the self-assessment. Nevertheless, the time available to do so was limited, and that alone could have led INS8 to withdraw from the process.

INS8a took the HEInnovate self-assessment himself, but he did not set a group experience or a group exercise. He did not refer back to it when he was preparing INS8 for the site visit. The OECD was interested in receiving feedback from the process leaders in INS8 in order to further develop the self-assessment to make it more suitable for all higher education institutions.

#### ***5.2.1.9. Higher education institution 9 (INS9)***

INS9 is the second institute to participate in the country review that decided not to engage with the HEInnovate self-assessment. One person was responsible for leading the process of preparing the HEI for the site visit. He is the Head of the Research Services and Career Development Department at the institution. He was previously involved with the HEInnovate self-

assessment tool, having already taken and evaluated it five or six years before the current country review happened. He had also given a presentation about it at the University Business Forum in Brussels in 2013 or 2014. Because of this involvement, the rector of INS9 nominated him to attend the kickoff meeting at the Ministry in January.

In the beginning, INS9 and particularly the rector was eager to engage in the exercise of taking the HEInnovate self-assessment and participating in the site visit. There was an assumption created at the kickoff meeting of the ministry that in order to participate in the country review and the site visits, HEIs must take the HEInnovate self-assessment as a form of preparation. The process leader started the process with an inhouse discussion with the rectorate. The main questions raised were, how they as an institution define innovation, and what would they consider entrepreneurial. It is worth noting that the process leader emphasizes the broader meaning of these concepts:

*“If you read the paper of Clark [...] they are not pushing the idea [...] of working closely with industry, but be proactive somehow in the way you govern or lead the university in an environment where the university is flourishing, if you have strong and independent research figures.”*

It is worth noting that the process leader in this institution anticipated resistance from many of its departments. Even though the process leader saw the potential benefits of using such a tool as it broadens the perspective of what entrepreneurship mean. INS9, with its heavy focus of many of its departments on humanities and social sciences, may not welcome the process.

*“Entrepreneurship is easily connotated with commercialization, [...] which is somehow seen as completely opposite to freedom of research. Looking for application, this means commercialization of universities. And it means somehow kind of a different view on education; is it a public good, or is it a commodity? So, you have all these kinds of discussions around this topic which comes somehow implicitly [...] if we talk about entrepreneurship or entrepreneurial thinking or the entrepreneurial university. [...] We have very strong humanities and social sciences. We have also recruited over the life science over the years there very much was a focus on strengthening basic research. [...] Now, it comes that we have to be an entrepreneurial university in the sense we have to work closer to industry. If it is translated to this, this gives a big-- this asks for opposition so to say. And this was, it was much more a political issue [...]”*

By April, INS9 came up with an initial list of the people they would like to invite in order to complete the self-assessment. This list included all the deans and all the professors, in addition to some sub group of the PhD students and sub group of the post-docs. This list had about 500 professors, 1,000 PhD students, and some master's students with a total of almost 5,000 individuals. The purpose of this sample was to create a critical sample that would represent

different perspectives of INS9. The process leader also tried the self-assessment tool group function by sending it out to his staff members.

However, the process leader never reached the step of sending out the self-assessment link to the list of people that were selected. He was waiting for the issues related to the GDPR to be resolved before taking any steps towards involving the whole institution with the self-assessment tool. The process leader expressed his deep concerns to representatives from WPZ Research and the OECD about these issues and the small window of time to complete the self-assessment process. After conversations with them, they told the process leader that INS9 can engage in the site visit activities without taking the self-assessment.

Alternatively, INS9 decided to create their own concept of who they think they are and where they stand by using the tool indirectly to invite people in the institution to reflect and to give them a different perspective on their activities. To do this, he sent out the description of the dimensions to the people in INS9 who would participate in discussions with the reviewing panel on the day of the site visit.

The process leader cannot imagine using the self-assessment tool on the whole institution level but thinks it can be very useful to use on departmental levels. The main reason for that is that he sees the value of the tool comes not from the results themselves, but more from the discussions generating around it. Therefore, he imagines if the tool is used in the future, he would follow the workshop structure to bring people together and examine their understanding of innovation and entrepreneurship that they have. The tool may help departments understand the various dimensions out there, and decide which ones are suitable for them to strengthen or pursue. Additionally, the process leader thinks that the tool can become a mirror where departments can see how they perceive themselves and how they are being perceived in this area.

### **5.2.2. Motivation of HEIs for engagement with HEInnovate self-assessment**

Motivation for engaging with the HEI self-assessment tool varied from one institution to another. They can, however, be divided to three categories. In the first category lies the institutions that wish to benefit from the process the way described on the HEInnovate website: “to explore their innovation potential.” The second category lies institutions that engage in the self-assessment mainly to be included in the country review and engage in the site visit process. The third category lies institutions that were led by departments that wished to raise awareness among different stakeholders about innovative and entrepreneurial activities that take place in the HEI. Naturally, none of the institutions in this study fall strictly under a single category, because most of them had more than one motivation. However, in this section, the researcher focuses on the primary motivation of each HEI, and their possible implications on the process of engaging with the self-assessment.



In the first category, INS1 and INS6 were interested in the tool for its intended purpose. The motivation in INS1 seemed to emerge from the process leader herself. This was evident from the way she described the self-assessment as well as her actions and methods to motivate the whole institution to engage in the process. INS1 had one of the deepest engagements with the self-assessment tool which relied on conducting workshops before and after the self-assessment questionnaire was taken. INS6 seemed to have its motivation come directly from the rector. The process leader in INS6 seemed to follow the main instructions provided on the HEInnovate website to implement the self-assessment, which is distributing it as a questionnaire across the institution and different stakeholders. The self-assessment did not have much added value to this institution. The process leader commented that a different plan or process should be implemented to collect more insightful information and have higher engagement. She also observed that INS6 was aware of its capacity and potential before using the HEInnovate self-assessment tool because of the many other evaluations and self-assessments this institution carries on a regular basis.

The second category includes INS2, INS4, INS5 and INS7. INS2 and INS4 had different plans for engaging their institutions in the self-assessment process. Nevertheless, these two institutions managed to follow their set plan with little deviation or change. This can be attributed to the fact that both process leaders in these institutions were engaged and fairly familiar with the HEInnovate framework and self-assessment tool a few months before the kickoff meeting at the Ministry. INS5 and INS7, on the other hand, engaged with the self-assessment as a questionnaire. INS7 process leader would have implemented workshops if she had had enough time for the process. However, due to the lack of time and the problems emerging from the tool's incompatibility with the GDPR, she decided not to promote it widely. The implementation of the self-assessment tool in INS7, in particular, seemed to have been completed for the main reason of participating in the site visit.

The third category encompasses INS3. The process of implementing the self-assessment in this institution was led by two people from the Transfer Center. The motivation for the assessment process in this institution was primarily to use it as an inspiration tool and also as an awareness tool of the activities and services provided in this institution in the areas of innovation and entrepreneurship. They also hoped that with the awareness the tool brought, the HEI governance would become more aware of their role and become more supportive of activities related to these areas. The process leaders used the tool as a questionnaire and they did not receive desired engagement with it. This is mostly due to the limited timeframe that made plans of engaging with the self-assessment deeper challenging. The process leaders plan to engage with the tool again using a different plan.

Because of the numerous challenges faced by most institutions engaging in the country review because of GDPR or the limited timeframe, it is not possible to establish a link between institutions' primary motivation of using the self-assessment and their level of engagement with it. It is also not possible to create this link even with the absence of these obstacles. It may be deduced that the different motivations of institutions to engage with the self-assessment is not

linked to the way they engage with it, or the depth of that engagement. It seems that the willingness of institutions to engage with these topics is enough to kick-off the process, and commitment to it is linked to other factors.

Nevertheless, the motivation of individual process leaders seemed to have a strong influence on the depth of the plan set to engage with the self-assessment or the probability of engaging with it again. For example, process leaders of INS1, INS2, INS3, and INS4 showed high trust in the potential benefits the self-assessment may bring. These institutions had various level of engagement, but they generally ranked the process value high, and are likely to repeat the process for different reasons (see Table 2 and Table 4). Moreover, all these institutions created workshops, follow up meetings, or expert groups to create channels of conversations and knowledge transfer. INS3 and INS4 in particular saw that the process would potentially have more value if more workshops were created. The process leaders in INS5 was curious about the self-assessment, but unlike the previous group, she was not familiar with it prior to the country review and had learned about it mainly while leading the process, and through the HEInnovate website. She had set a feasible plan that utilized the self-assessment as a questionnaire. She saw value in the process, but she cannot know the real extent of this value at that point and thinks more time need to pass to see its influence. INS6 and INS7 were critical of the self-assessment for numerous reasons that were elaborated on previously. They created plans to engage with it as a questionnaire, but because of the problems and limitations they perceived in it, they were reluctant to promote the assessment in their institutions. Both process leaders were aware that they could have attracted more people to participate in the self-assessment, but they chose not to.

Institution	Primary Motivation of Institution	Level of Motivation of Process Leader	Method of Engagement with HEInnovate	Rate Process Leader(s) gave for the Process
INS1	Explore innovation potential (1 <sup>st</sup> Category)	Very motivated	Workshops	8/10
INS2	To prepare for and participate in the country review	Very motivated	Snowballing sampling	9/10
INS3	To prepare for and participate in the country review	Curious and motivated	Focus groups	7/10
INS4	To raise awareness in institution on the topic, and inspire stakeholders	Very motivated	Questionnaire	8/10

INS5	To prepare for and participate in the country review	Curious and fairly motivated	Questionnaire	Refused to rate
INS6	Explore innovation potential (1 <sup>st</sup> Category)	Curious, but not deeply motivated	Questionnaire	4/10
INS7	To prepare for and participate in the country review	Curious, but not deeply motivated	Questionnaire	4/10

*Table 2: Summary of Different Motivations of HEIs and Process Leaders to Engage with the Self-Assessment*

### **5.2.3. Types of plans and approaches set for HEInnovate self-assessment**

Planning the self-assessment process is one of the essential steps for a successful engagement with it according to the Stages of Implementing Self-Assessment framework. The plan should align with the goals the HEI set for the process and should also be feasible. Institutions in this study had different approaches for plans to engage their institutions with the HEInnovate self-assessment. Below are the identified approaches along with their benefits and possible risks.

#### **5.2.3.1. Questionnaire approach**

The most common approach used by HEIs in this study was the questionnaire approach. HEInnovate self-assessment can easily lend itself to be used in this approach. Moreover, the possibility to use the self-assessment as an exercise by individuals to assess their institutions (without needing to involve other people in the institutions) makes the emergence of this approach intuitive. This approach entails sending the self-assessment to target participants, and that can include everyone in an institution and all stakeholders. INS3, INS5, INS6, and INS7 used this approach to engage with the self-assessment, emailing the self-assessment link to almost everyone in their institutions. These emails are for most participants their first contact with the self-assessment and HEInnovate.

There are a number of benefits to this approach. It is quick and easy to apply. All the institutions using this approach stated that two to four weeks were enough to start and finish the process. It allows the potential engagement of everyone in the institution. It can also be used in combination with other approaches as seen in INS1, INS2, and INS4. However, when used alone, this approach has many drawbacks and risks. As evident from this study, the participation rate is often low when this approach is used. Attracting students to complete the self-assessment was particularly challenging. One of the reasons process leaders attributed this to is survey fatigue. Participants had survey responding fatigue as their institutions often carry out many surveys throughout the year, and HEInnovate self-assessment can easily be seen as just another survey. Additionally, participants suffer from survey taking fatigue because HEInnovate self-assessment

is a relatively lengthy one. It is estimated that participants would need about 20 minutes to finish the self-assessment, but process leaders indicate that most participants usually spend much more time than this, especially when they don't have any prior knowledge about HEInnovate before starting the self-assessment. Indeed, there are many people who registered and started the self-assessment, but they never completed it.

Another risk associated with using the questionnaire approach is the unreliability of the results for some institutions. This risk comes in two folds. First, the accuracy of the results cannot be guaranteed, as there is a chance that participants may misinterpret the self-assessment statements or give low ranking because they are not aware of certain activities in the institution. This was highlighted by almost all the institutions that used this approach. Second, some process leaders reported that the automatic analysis and graphs formulated by the HEInnovate website are not substantial enough to base any institutional decisions on. In order to collect more meaningful data and test its reliability, manual analysis have to be done by the process leaders. The process leader in INS6 highlighted this drawback and how it can hinder taking any further steps relying on the self-assessment results.

It is worth noting that the institutions that used this approach did not have a clear plan to engage with the self-assessment for long stretches of time because they were waiting for confirmation from the Ministry regarding their selection, or the green light to use the self-assessment. This left these institutions with little time to consider any different approach. INS3 and INS7 process leaders clearly stated that they would have carried out completely different plans if they had more time. INS6 process leader partially echoed them by stating that the process would have had more value if a different engagement approach is implemented.

#### ***5.2.3.2. Focus group approach***

This approach was implemented by INS4. Instead of attempting to engage the whole institution in the self-assessment, a selected few were chosen to participate. People were selected according to how closely they work with topics related to innovation and entrepreneurship. The main mean of communicating with them was by email. However, because the number of the selected people are small, emails were personalized, and there were frequent communications in person or by phone. The interest rate in the self-assessment was high, and everyone in the selected group completed the self-assessment. After the completion of the tool, all participants met and exchanged opinions and thoughts about the results.

This approach has a number of benefits. It is a feasible plan to implement when the timeframe is limited. There is a high level of personalization, which makes participants more motivated to engage with and complete the self-assessment, and symptoms of survey fatigue decreases. This approach can also be useful when HEI leaders wants to understand the perspectives of specific groups in the institution. Despite the benefits, there are some risks to this approach. There is a high probability of missing the perspective of certain individuals or groups in the institution. INS4 was

aware that they did not include external stakeholders, and they would have done so had they had enough time. However, limiting the self-assessment to a group of people that is deemed by the institution leaders and the process leader as related to the topic may create some blind spots. This can happen because of the unintentional exclusion of groups that may have relevant or significant input. Another risk is the possible misinterpretation of some of the statements or the rating system in the self-assessment by participants. Because there were no meetings prior to the distribution of the self-assessment, some aspects of it may stay unclear to participants. This was seen in INS4 as the process leader received many phone calls and emails asking different questions about the self-assessment. This may affect the reliability of the data collected.

Even though this approach was implemented by one institution in this study, INS7 and INS9 considered implementing this approach by separating different departments and have them engage with the self-assessment. To them, this would provide more meaning to the results, especially when attempting to assess large institutions whose departments may have varying perspectives on the topics of innovation and entrepreneurship. It may also create more meaningful and relevant discussions post the self-assessment.

#### ***5.2.3.3. Snowball sampling approach.***

This approach was implemented by INS2. It has some commonalities with the focus group approach. The people participating in the self-assessment process are selected to a great extent. The main difference in this case is the selection does not only come from the leadership and the process leader, but the decision is trickled down to people who participate to spread awareness about the tool. The process leader started the process by creating a group of experts who reflect the different dimensions existing in the HEInnovate self-assessment. The selected experts created their own groups to discuss the topics existing in the self-assessment and to engage with it. INS2 had the highest number of people completing the self-assessment at 186. The main mean to communicate with potential participants is meeting them in person but possibly contacting them by phone and email.

There are a number of benefits to this approach. Most participants were contacted in person and requested to participate in the assessment. This personal approach raises the willingness of people to participate and complete the self-assessment, which in their eyes does not become just another survey sent out to everyone. The reliance on different groups to disseminate the self-assessment opens many channels of conversations and discussions among these groups. These discussions can aid in knowledge exchange and generating new ideas. Moreover, because the door of participation is left open for anyone who is interested or whose work is relevant to the HEInnovate framework, the participating sample may be more representative of the institutions' activities in these fields.

Nevertheless, there are a number of risks to this approach. Despite the high participating number, the institution may be missing the perspective of some stakeholders who may think that

the topics of innovation and entrepreneurship is not relevant to them. The tool has the potential to work as an inspiration tool as well as its role as an assessing one. A second risk can be the misinterpretation of some of the items of the self-assessment tool. This can occur because the orientation of the self-assessment is not centralized within the institution, and it spreads from different individuals to others. Another risk is related to the timeline. If this approach is implemented without setting a firm timeline, the self-assessment may stay open for an extended period of time. INS2 did not fall into this problem because the process leader had set a firm deadline for the end of the process.

#### **5.2.3.4. Workshop Approach**

This approach was implemented by INS1. The process leaders followed the workshop plan outlined by HEInnovate workshop handbook (described in section 2.4.3 in this thesis). They created five Step 1 workshops, made the self-assessment available only for those who participated in the workshop, and followed up with the participants with seven Step 3 workshops to share and discuss the results, and collect possible topics and questions they would like to address to the team of experts from the OECD.

There are a number of benefits to this approach. First, participants willingly volunteer to participate in the process. Therefore, their motivation is high, and they are more likely to complete the self-assessment and stay engaged until the end of the process. Second, the engagement level is deep, as participants don't end their engagement by completing the self-assessment, but they are included in follow up discussions. Third, the Step 1 workshops work as an effective way to familiarize participants with the self-assessment and motivate them to complete it. Fourth, these workshops allow all participants to have direct contact with the process leaders which may assert that their contribution to the self-assessment and the process is valuable. Additionally, the workshops create a foundation of understanding of what innovation and entrepreneurship mean for each institution, and it is a window for sharing and discussing actions and activities related to the HEInnovate framework prior to conducting the self-assessment. When this is done, the results of the self-assessment become more reliable and easier to analyze. This was illustrated in INS1, especially when the process leader ran two trials of the self-assessment; one without discussing what these concepts mean for the HEI and the actions they do in relation to them; and another after having these discussions. The difference in the results of the self-assessment were significant.

Nevertheless, there are a few risks to this approach. The first one is that it requires much more time and commitment from the process leaders compared to the other approaches. The process leaders in INS1 took about five months to implement this plan, and they commented that it was a very tight timeframe, and there should be more time to implement their plan better. In order for INS1 to implement this approach, they had to almost ignore the problems of the incompliance of the self-assessment tool with the GDPR. Another challenge that emerged with in this approach is attracting certain stakeholders to participate. Attracting students was particularly challenging, even though it was manageable in the end. The last challenge that may be associated with this approach

is related to process leaders' level of knowledge and experience of the self-assessment tool. The process leaders should be expert facilitators and know the self-assessment and the HEInnovate framework very well ensure the success and effectiveness of the workshops.

It is worth noting that INS3, INS4 and INS7 would consider implementing this approach in the future, or they would have implemented this approach while engaging with the self-assessment had they had more time, and the GDPR was not an obstacle. In their view, this approach creates better and deeper engagement and would give more reliable results.

Method of Engagement	# HEIs	Benefits	Drawbacks
Questionnaire	4 (INS3, INS5, INS6, INS7)	<ul style="list-style-type: none"> <li>- Easy and quick to implement</li> <li>- Has the potential of involving a large number of people or the whole institution</li> <li>- Can be used in combination with other methods</li> </ul>	<ul style="list-style-type: none"> <li>- Level of engagement can be shallow</li> <li>- Survey fatigue can result small number of people completing the assessment</li> <li>- Results of the assessment can be unreliable because participants may misinterpret some statements in the self-assessment</li> </ul>
Focus Group	1 (INS4)	<ul style="list-style-type: none"> <li>- Feasible plan when the time-frame and the resources are limited</li> <li>- More effective communication with participants leading to high participation rate</li> <li>- Useful when an HEI needs to learn about the topic from a certain perspective</li> <li>- Can result in more meaningful discussions after the assessment since the participating group has a common ground</li> </ul>	<ul style="list-style-type: none"> <li>- A risk of excluding individuals or groups who may have significant input</li> <li>- Results of the assessment can be unreliable because participants may misinterpret some statements in the self-assessment</li> </ul>
Snowball Sampling	1 (INS2)	<ul style="list-style-type: none"> <li>- More effective communication with participants leading to high participation rate</li> </ul>	<ul style="list-style-type: none"> <li>- Can result in the exclusion of groups that consider the topics of innovation and</li> </ul>

		<ul style="list-style-type: none"> <li>- More effective dissemination process (compared to the focus group) leading to a larger number of groups and individuals participating</li> <li>- Has the potential of encouraging discussions and knowledge exchange between different departments and groups</li> </ul>	<ul style="list-style-type: none"> <li>entrepreneurship are not relevant to them</li> <li>- Results of the assessment can be unreliable because participants may misinterpret some statements in the self-assessment</li> </ul>
Workshops	1 (INS1)	<ul style="list-style-type: none"> <li>- Most participants volunteer to participate in the process, which leads to higher completion rate</li> <li>- Participants are familiarized with the meaning of the statements, making the assessment results more reliable</li> <li>- The likelihood of discussing the assessment results with the participants is higher as well as having these discussions mirrored in the strategic plan</li> </ul>	<ul style="list-style-type: none"> <li>- Requires heavy time and resource investment to implement</li> <li>- Process leader(s) have to be well trained to deliver such workshops</li> <li>- Attracting certain stakeholders to participate can become a challenge because of the time investment needed</li> </ul>

*Table 3: Summary of the Benefits and Drawbacks of the Methods of Engagement with HEInnovate*

#### **5.2.4. Roles of persons responsible for leading the process of completing the self-assessment**

Selecting an appropriate person to lead the self-assessment process is a crucial step in Stage 1 of the Stages of Implementing Self-Assessment. According to this framework, this selection is the foundation for a successful assessment process and its closing. In this section, a closer look will be given to the selected roles people who led the process had, and how they might have affected the self-assessment process.

The cases included in this study show the people responsible for leading the process of engaging their institutions in the self-assessment came from many areas across an HEI and different career levels. Most of them were selected by HEI leadership to lead the process, and the tendency seems to choose persons who have previous knowledge or experience with the HEInnovate framework rather than on the actual position they hold in the institution. Previous process leaders' knowledge of the HEInnovate self-assessment can be seen in six institutions out of nine in the cases included in this study.



However, the decision to have one or more process leaders, create teams, or involve entire departments in the process was never taken by HEI leadership, but rather by the process leaders themselves. Five institutions had one person leading the process, and four had two people doing so. Table 4 shows a short summary of facts about the roles of process leaders. Out of the four institutions that had two people leading the process, INS2 created a team that represent different areas in the HEI, to have an important role in the process leading; while INS3 involved their department in preparation for engaging the institution in the self-assessment.

Those who led the process alone did not feel that they needed the assistance of an additional person to aid them in the preparation despite the challenges they faced. These challenges did not seem that they would be resolved by having an additional person leading the process. It is worth noting that the process leaders in INS4 and INS7, who led the process alone, were strongly in touch and assisted by an actor in their HEI. INS4 process leader described how the rector was very active in spreading awareness about the tool and encouraging people to participate in the self-assessment, and later in the site visit. Even though the rector was not involved in the details of the process planning, her actions and support of the process had a strong influence on the process. INS7 process leader was closely in touch with the entrepreneurship professor who helped her clarify ideas and concepts around the HEInnovate framework and gave her suggestions of whom to include in the self-assessment invitation and site visit participation. However, there are no conclusive evidence that show that leading the process alone or with more than one person had substantial effect on it.

INS#	Main Process Leader Position and Department	Additional Process Leaders and Their Department	Was the Process Leader assigned or Volunteered	Rate Process Leader(s) gave for the Process
INS1	Head of Academic of Institution Development	Works in Economic Development	Assigned by Leadership	8/10
INS2	Executive Vice-President	Startup Coach & Community Manager	Assigned by Leadership	9/10
INS3	Head of Transfer Center	Dean of Transfer Center	Volunteered	7/10
INS4	Assistant of Academic Council	N/A	Assigned by Rector	8/10
INS5	Assistant of Chancellor and Rector	N/A	Volunteered	Refused to rate
INS6	Head of the Office of Quality Management	N/A	Assigned by Leadership	4/10
INS7	Assistant of Vice Rector of Academic Affairs	N/A	Assigned by Leadership	4/10

INS8	Quality Enhancement Expert & Quality Researcher	Head of Quality Enhancement	Brought the Process to HEI. Assigned Leadership by	4/10 (did not take self-assessment)
INS9	Head of Research Services & Career Development Department	N/A	Assigned Leadership by	7/10 (did not take self-assessment)

*Table 4: Summary of the roles of process leaders and their ranking of process value*

It is notable that all process leaders who chose to work with one or more people in leading the process come from higher and more powerful positions in their institutions. Similar to the group described above, process leaders who worked in teams of two were not immune from the challenges that were faced by the former group. Nevertheless, choosing to have more than one person to lead the process is an illustration of one side of the effect of having a person with a higher position leading the process. Those institutions that had individuals with higher ranking leading the process had a more decisive path and resolution with where the process is going. INS8 and INS9 decided not to engage with the self-assessment, and to engage with the site visit in their own ways. INS6 was certain that the self-assessment did not add much to what they know about their institution and is unlikely to engage with the self-assessment tool again. INS1 and INS2 were certain about taking the results of the self-assessment and the conversations generating from it to their institutions' strategic planning. They were also certain about the fact that they are going to take the self-assessment again in the future. Another example is INS3, where despite the challenges faced during the process, they were certain that they would engage with the self-assessment again. They would use the results to bring more attention to the topics of innovation and entrepreneurship to different stakeholders in the institution.

When comparing the previous affirmative conclusions to those of process leaders who come from less powerful positions, the contrast is evident. To illustrate, both INS4 and INS5 process leaders are not sure whether the results of the process would lead to more discussions or have any long-term effect after the end of the site visit. The process leader in INS4 thinks that the discussions that happened around the self-assessment results were valuable, and they should continue further after the site visit is over, but this all lies in the hands of the leadership to push such an initiative forward. Similarly, with INS5 who described the self-assessment as a "door-opener" to new ideas but she is not sure what would happen next because these decisions lie in the hands of leadership.

This study cannot reach a conclusion as to which positions or departments are better suited to lead the process of engaging the institution in the self-assessment. There were no consistent patterns linking the positions and the type of process or plan made to engage an institution with the self-assessment. However, one important aspect to consider is the question of who brings the self-assessment process to the institution. In most HEIs in the study, the rector or university

leadership are the ones bringing the process to an HEI. It can be observed that leadership gains value from the information generated from the self-assessment. The process leader in INS4 pointed out that the self-assessment was most valuable for the leadership, but possibly not very valuable for professors and researchers. She adds that the process might have taken a different angle if it had come from different stakeholders in the institution.

What she mentioned is indeed mirrored in some HEIs in this study. In cases where process leaders are the ones bringing the process to the HEI (as oppose to the HEI leadership), the process leaders seem to have strong motivation, commitment and interest for the success of the process, and in following up on the self-assessment results. This can be seen in INS1 and INS3. In these cases, the results of the self-assessment are interpreted from the perspectives of these departments, and the motivation to undergo the process are almost always related to their departments' activities. In INS1, the results are going to shape the next strategic plan they create, and in INS3 the transfer center hopes that the self-assessment brings more attention to their activities and can generate more support from leadership to their work.

Thus, the selection of process leaders and the departments they come from have an impact on the process goals set and perused. Additionally, they may not have a direct impact on the plan set, but the amount of power their positions hold has an impact on the potential depth and process completion.

#### **5.2.5. Perceived value of HEInnovate self-assessment**

The process leaders were asked in the interviews done for this study to estimate the value their institutions had from engaging with the HEInnovate self-assessment tool on a scale from 1 to 10. Table 2 and Table 4 show these ratings. A correlation can be observed between the depth of engagement with the self-assessment and the value process leaders rank the exercise. INS1, INS2 and INS4 who have engaged with the self-assessment in different approaches other than the questionnaire, have given the self-assessment exercise a high rate. INS6 and INS7 who engaged with the self-assessment using the questionnaire approach gave it a lower rating. It can be deduced that there may be a causality relation between the depth of engagement in the process and the rate the process leaders give for it. A clear example of this can be seen in INS7, where the institution and the process leader showed deep interest in the topics that appear in the HEInnovate self-assessment. However, due to the lack of time to implement the self-assessment, and the GSPR problems that existed in it, the process of engaging with the self-assessment was relatively shallow.

Nevertheless, describing the relation between depth of process implementation and process leader ranking as a causal relation is to some extent inaccurate. As described in section 5.2.2, the motivation of the process leaders before the initiation of implementing the self-assessment process and their level of knowledge and awareness about the tool seem to have a strong impact on the entire process and plan. This was particularly evident in INS1. Moreover, INS3 shows a special case where the process leaders engaged within their department with the self-assessment using the

workshop approach, but engaged the whole institution using the questionnaire approach. The process leaders of INS3 did not have the desired level of engagement with the self-assessment, and the results of the self-assessment were not reliable (as detailed in 5.2.1). They, nevertheless, rated the value of this exercise high. This shows that the perceptions the process leaders have about the self-assessment and their perception of its potential value in the future may affect how they perceive its current value. Therefore, the perception of the value of the self-assessment by the process leaders has an impact on the way an institution chooses to engage with the self-assessment, and also the final perception of value after the process have been concluded.

Therefore, the correlation found between the level of engagement with the self-assessment within institutions and the value perceived from this exercise can be explained by simultaneity influence. On the one hand, executing the self-assessment using an appropriate approach and a detailed plan affects the value of the process. On the other hand, the value that the process leaders perceive of the self-assessment affects the plan and the level of engagement.

#### **5.2.6. Additional perspective of HEIs that declined using the self-assessment tool**

This section is not dedicated to address any research questions or sub-questions, but it attempts to highlight an interesting perspective shared by the two institutions that refused to use the self-assessment tool while preparing for the site visit. The process leaders in INS8 and INS9 expressed a sense of relief that they managed to decline engaging their institutions with the self-assessment tool.

As mentioned previously, INS8a was the one bringing the self-assessment process to his institution. He thought that the HEInnovate framework and the self-assessment exercise would be interesting to explore and implement within his institution. However, when INS8 arrived to the decision of not engaging with the self-assessment tool, INS8a was relieved. Going through the process with the limited timeframe that was left for INS8 was going to be challenging and carry many risks. INS8a expressed this in the interview for this study:

*“I was the person who brought the idea of HEInnovate to [INS8], and of course I was one of the key persons organizing the process, but this of course was also my responsibility in the sense if for reasons whatsoever, if this process would have failed, or if [INS8] would have had a disadvantage or a negative outcome or whatsoever, this also could have been associated with me. [...] It could make sense to [INS8] to participate in that process [...], but of course, I didn’t want to press too hard on this, meaning that there has to be an agreement or consensus with [INS8b] and the rector because there has to be something of a shared responsibility [...] because in that sense it could then jeopardize my position at [INS8] if I bring in the message for something that fail to have a positive or at least a neutral effect for [INS8].”*

Despite these challenges, INS8a thought that it would have been possible to move with the process forward to with the institution. Nevertheless, another risk persisted which is the lack of sufficient time to execute an efficient process.

*“I think we could have organized something, yes. It only would have made it for me as a person very stressy. It could have been risky, and only a few persons would have participated. I mean, I think so because I have convinced a few persons to participate, but this would have required a lot of communication. I mean, why do we do this, maybe the rationality could have been questioned, maybe it could have been seen by others not well-prepared process which was led by the unit, so okay. There were risks involved about this.”*

In other words, there was a risk of linking both himself and his unit to a poorly executed process. INS8a additionally mentioned how this can harm the reputation of the Quality Enhancement Unit. There is certainly a degree of trust between the university leadership and this unit, but the process may leave a negative impression.

The process leader in INS9 expressed similar thoughts regarding risks to his position in the university. With the problems associated with the GDPR, the process leader found it very difficult to proceed with the process in his institution:

*“The reason why I didn’t use the HEInnovate tool was a very simple and practical one, and this was the data protection issue. [INS9] is sometimes a little bit of a complicated university. [...] To put it kind of, in a little bit less fair-- less fair way-- we have a lot of critical ethos, and the data protection, you know the data protection law has changed, and we have to adapt. And the tool was, in a way, set up that you have to register first [...]. We were pushing our colleague from the OECD and from the [European] Commission-- so our contact person [...] I told her, I will not survive in the university if I do this. You can do it [the self-assessment], but you have to register first. So, this is for us a killer.”*

This shows that even though the HEInnovate self-assessment is neither a benchmarking tool, nor does it make the information gathered within an HEI available outside of it, some pressures and risks exist. The risk for these two institutions lays in the prospect of leading a failing process, and the fear that the self-assessment may reveal unfavorable results. The information regarding the self-assessment results were expected to be shared, and as the process leader of INS9 puts it:

*“Part about sharing the results and not being relaxed, because in the end, no matter what you say, it is an evaluation.”*

## **6. Summary and Conclusion**

This research aims to shed light on how self-assessment tools in the area of innovation and entrepreneurship in higher education are used, by particularly focusing on the HEInnovate self-assessment tool. It takes place in Austria in the form of a case study of nine Austrian HEIs that have engaged with the HEInnovate self-assessment between January and June of 2018 as part of their participation in the HEInnovate country review that took place in June 2018. The main perspective of this study is that of the individuals who led the process of engaging with the self-assessment tool within their HEIs. The main objective is to identify the different ways HEIs engage with the self-assessment tool. This chapter will summarize the main research findings, provide conclusion, recommendations for stakeholders, and recommendations for future research.

### **6.1. Research Findings and Conclusion**

The findings of this research are outlined in accordance with the points raised in the main research question and the four sub-questions. It also reflects the main findings with the literature review and conceptual framework outlined earlier in this thesis. An additional part is added to reflect the perspective of the two institutions that refused to engage with the self-assessment tool.

#### **6.1.1. Steps HEIs take to engage with the HEInnovate self-assessment**

The steps that the HEIs participating in this study have taken to complete the self-assessment have varied quite extensively. The timeframe dedicated for the process have also varied, taking as long five months, and as little as one month. All the institutions that completed the process of engaging with the self-assessment tool have followed the first four stages of the “Stages of Implementing Self-Assessment” framework. However, they have done so at different degrees of deepness. Additionally, some of the HEIs have implemented the stages expansively, while others have gone through the four stages in a short period of time, and almost simultaneously. Three institutions have implemented Stage 5, and only two institutions have expressed the assertion that they will implement Stage 6. The other institutions seem to have stopped the process after the completion of the self-assessment, and it is not clear if other steps would be taken in order to use the results of the process. The detailed analysis of some elements of the first four stages are addressed and analyzed in the sub questions of this research.

The high diversity in implementing the HEInnovate self-assessment may have some benefits that can include adjusting the tool to each of the HEIs’ goals and perspectives. Nevertheless, this can lead to an inefficient use of the tool, which can limit its potential benefits. In the literature of quality management self-assessment in higher education, following all the stages of carrying out self-assessment, regardless of the selected strategy or approach, is imperative for reaping substantial benefits from it (Hides et al., 2004; José Tarí & de Juana-Espinosa, 2007). The steps that seem to be missing in the different processes of implementing the HEInnovate self-assessment involve discussing outcomes and establishing an action plan. Without this step, the whole process

is likely to fail (Hides et al., 2004). In order to implement this crucial stage, all the previous stages and the self-assessment plan have to be designed to reach it. In the high variety of plans and different interpretations of the HEInnovate self-assessment, the stage of translating the results to an action plan was often not planned for, and therefore, never reached. HEIs that did not have did not plan to create an action plan stemming from the self-assessment have often concluded that the exercise had limited or no benefits for their institution. Thus, it can be concluded that in order to better utilize the HEInnovate self-assessment exercise, the planning process should have deeper engagement with the process and aim to reach a stage where an action plan can be formed.

### **6.1.2. Motivations of HEIs to engage with the self-assessment**

Within the seven institutions that have completed the process of engaging with the self-assessment, three main motivations were found for going through this process:

- Two institutions were interested in the self-assessment for its intended purpose: “to explore their innovation potential.”
- Four institutions completed the self-assessment to be able to participate in the country review. The self-assessment, in their view was an essential part for the preparation for the country review.
- One institution was interested in using the self-assessment as a mean to spread awareness in the institution about the different actions and activities related to innovation and entrepreneurship.

HEIs did not strictly have one motivation, but in this list, the researcher focused on the primary ones. The research could not establish a link between the type of main motivation an institution had, and plans set to engaged with the self-assessment. It appears that any motivation can initiate the process of the self-assessment, and the commitment to complete the process is linked to other factors.

Rather than the motivation of the institution, the motivation of process leaders appeared to have a considerable impact on the type of plan set to engage with the self-assessment. On the one hand, process leaders who had high trust in the potential of the tool created elaborate plans to engage their institutions deeply with the self-assessment. On the other hand, process leaders who were more critical of the self-assessment tool, and saw its potential shortcomings as a risk, created plans that did not engage the institution with the self-assessment deeply. Therefore, it can be concluded that process leaders have to have strong motivation and understand well the potential of the tool in order to create deeper engagement opportunities with it within institutions.

The latter finding echoes what is found in the literature of implementing self-assessment tools. The step of selecting a suitable process leader and clarifying the goals of the process as well as the different responsibilities they have is directly linked to effective completion of the process and reaping value from the exercise. Therefore, it is crucial that HEIs which plan to engage with

HEInnovate to fulfill the elements mentioned in Stage 1 of the “Stages of Implementing Self-Assessment” thoroughly in order to lay the foundation for a successful process implementation.

### **6.1.3. Types of plans set to engage with the self-assessment tool**

The process leaders in HEIs formed various plans that were different to a great extent. When setting a plan, the process leaders focused on the feasibility of the plan given the timeframe available, and the information they have about the tool and their understanding of it. Because of the lack of availability of suggested plan(s) set by the HEInnovate website, process leaders mostly created their own using their previous experience and understanding. In this study, four approaches of implanting the self-assessment were found:

1. **Questionnaire Approach:** it entails sending out the self-assessment to potential participants (usually the whole institutions, and as many external stakeholders as possible) without prior contact or orientation about the tool. This approach can be arrived to intuitively by process leaders since the tool can be used by individuals alone who can start the self-assessment by relying mainly on the information available on the HEInnovate website. Thus, a big number of institutions in this study followed this approach. It is easy and quick to apply and requires much less time and resources compared to the other approaches. However, it has a number of drawbacks that should be addressed, such as lack participation mostly because of survey fatigue within the institutions, and the lack of motivation to start or complete the self-assessment. The level of engagement of participants is shallow since their engagement with the self-assessment mostly begins and ends with the questionnaire. The data gathered is often not reliable and can't be the base for strategic decisions or plans.
2. **Focus Group Approach:** it entails engaging a selected few with the self-assessment. The participants can come from different parts of the HEI, similar to what is observed in one of the HEIs in this study. Participants can also come from one specific department in the HEI, as was suggested by two HEIs in this study. After selecting the participants, they engage with the self-assessment in a way similar to that in the questionnaire approach. Nevertheless, more communication is possible and is involved in the process because of the relatively small number of participants. After participants complete the self-assessment tool, they gather to discuss the results, raise questions, and suggest future actions and strategies. This plan approach is feasible when the timeframe is limited. Participants are more likely to be motivated to engage with the process. There is a risk of excluding some stakeholders that may have relevant input to the assessment. Another risk can be the misinterpretation of some of the statements of the self-assessment because participants were not given a unified orientation about it.
3. **Snowball Sampling Approach:** it entails engaging a selected group of people in the self-assessment, but the selection is not only done by HEI leadership and the process leader, but it trickles down to participants suggesting potential participants to engage with the tool. The self-assessment is sent to the selected participants for completion. This approach has



many commonalities with the Focus Group Approach, with the exception of the flexibility of selecting participants, and the great chance of including as many stakeholders who are interested in the topics of innovation and entrepreneurship as possible. It also needs more time to execute compared to the Focus Group Approach. Additionally, like in the Focus Group Approach, participants are not exposed to a unified orientation about the self-assessment, which may lead to inconsistencies with the responses.

4. **Workshop Approach:** it entails following the suggested workshop schemes by HEInnovate. In the case study, two types of workshops were created; one before the self-assessment to orient potential participants, and one after the completion of the tool as a follow up and a discussion opportunity with everyone who participated in the self-assessment. This approach has a number of strengths including strongly motivating participants to engage in the process, and effectively orient them with the self-assessment and the goals of the institution to engage with it. However, the process requires much time and effort from the process leaders to execute. In the case of the HEI that implemented this approach, they found that five months were very little time to implement this plan.

It can be observed that HEIs that engaged with the self-assessment using approaches other than the Questionnaire Approach had a much deeper engagement with the process, collected more reliable information, and were able to advance through Stages 5 and 6 of the “Stages of Engagement with Self-Assessment” framework, and therefore, have a bigger outcome and possible impact from the process.

#### **6.1.4. Process leaders’ selection and their roles inside their HEIs**

The selection of process leaders is one of the most influential aspects in shaping the process of engagement with the self-assessment. This is reflected in both the literature of implementing self-assessment tools, as well as in the case studies done for this research. This study shows that process leaders come from different departments, positions, and different career levels. Their selection mostly comes from HEI leadership, but in some cases, process leaders volunteered to do the task. Rather than considering the relevance of the departments the process leaders come from, the selections are mostly made on the basis of individuals’ previous knowledge of the HEInnovate tool and framework.

This study found that some process leaders chose to work with another person to lead the process with them, and in some cases, they chose to involve teams or departments to make decisions regarding the process of implementing the self-assessment. A conclusion cannot be reached on the benefits or shortcomings of having more than one person leading the process. Nevertheless, it was observed that process leaders who come from higher career levels are the ones who chose to include other persons in the process of leading the self-assessment. Additionally, high career levels gave the process leaders more power to either create elaborate processes that needed more time and resource investment or reach a definite conclusion that the self-assessment

process was not suitable for their institution and made decisions accordingly. Whereas, process leaders who came from mid-career positions, did not have much of the decision-making capacity as the former group, and much of the course of the process of implementing the self-assessment is determined by the HEI leadership.

Additionally, the question of who brings the process to the HEI seems to have a significant influence. In most HEIs in the study, the process was initiated by the HEI leadership. In these cases, HEI leadership arguably gains the most value from the process. In cases when the self-assessment was brought to the HEI from department outside the leadership, the self-assessment seems to take a different interpretation, purpose, and the value goes back to the department initiating the process.

It can be concluded that the process leaders had a major influence on the engagement with the self-assessment found in different institutions. This study illustrates that they have the biggest impact on the process. This can be seen as a point of strength, as process leaders have much freedom to conduct the process. However, the success of the process often lies essentially in the hands of one or very few individuals. Therefore, Stage 1 in the “Stages of Implementing Self-Assessment” framework is one that should be emphasized in order to better utilize HEInnovate self-assessment tool.

It is worth noting that in the literature of implementing self-assessment tools in the area of quality management, it is strongly encouraged to select process leaders from the departments of quality management in the HEIs. This recommendation is for the purpose of minimizing the duplication of efforts while using the self-assessment tools and to select the most knowledgeable individuals in the area of quality management to lead the process extensively (EFMD, 2018; Hides et al., 2004; José Tarí, 2010). It can be argued that this method of selecting process leaders may not be suitable for self-assessment tools in the area of innovation and entrepreneurship because, as previously mentioned, different departments can gain different insights when leading the process. Nevertheless, it is inferred that the experience, responsibilities, and knowledge of process leaders is crucial for the process, which is mirrored in this study’s results.

#### **6.1.5. Perceived value of HEInnovate self-assessment**

A correlation can be observed between the level of engagement with the HEInnovate self-assessment and the value that the process leaders perceived of it. The relationship between the depth of the engagement process and the perceived value of it is not a causality influence, but rather a simultaneity influence. To illustrate, the deeper the engagement process was the higher process leaders ranked the value of the tool. Simultaneously, the initial value that the process leaders perceived for the self-assessment tool, the deeper the engagement process was. This shows that the initial contact of process leaders has of the self-assessment can have a potent influence on the process.

#### **6.1.6. Perspective of HEIs that declined using the self-assessment tool**

The two HEIs that declined using the self-assessment, applied for the HEInnovate country review in the beginning with the intention of engaging with the self-assessment tool. In both institutions, the HEI leadership was initially positive about the prospect of engaging with the self-assessment. However, a few complications changed the attitudes of these HEIs. Two observations are worth highlighting here:

- Both institutions perceived that the self-assessment may not be suitable for their institutions. One institution arrived at this conclusion after examining a few experts who are part of the OECD panel that was going to visit the institution. This institution observed that the experts had a heavy focus on the economic and commercial side of entrepreneurship and innovation, which did not suit them and their vision. The other institution places big importance on the humanities and the social sciences. These areas of study and research do not lend themselves easily to activities related to entrepreneurship and innovation. Therefore, the latter institution had much potential resistance to the process. Nevertheless, the process leader of the latter institute saw potential value from engagement with the HEInnovate self-assessment, even within the fields of humanities and social sciences.
- Both process leaders expressed feeling that leading the self-assessment process pose a degree of threat to their positions, and the reputation of the departments they work for in the occasion of leading a poorly executed process plan. This perspective was never revealed by other process leaders in institutes that completed the self-assessment. However, it shows that it is crucial to create a feasible plan that would meet the expectations of the HEI of participating in the self-assessment. Moreover, it is important to provide a suitable timeframe for the process execution.

#### **6.2. Recommendations for Different Stakeholders Involved in Creating and Using Self-Assessments in the Area of Innovation and Entrepreneurship**

The researcher was able to arrive at four main recommendations for the usage of the HEInnovate based on the findings of this study. The recommendations are outlined below along with brief reasoning.

Several plans should be suggested, outlined in detail, and made available for process leaders. They should be based on current experiences of HEIs using the self-assessment tool. This study demonstrates that the Questionnaire Approach is the most commonly used one, and is a weak one to reach reliable results, or even a representative sample to complete the self-assessment. Other approaches can be more effective. More than one approach should be suggested so different HEIs with different available timeframes, experiences, resources, and set goals would be able to choose the plan approach that is more suitable for them.

The Focus group Approach, the Snowball Sampling Approach, and the Workshop Approach can be taken as good examples or as bases for suggested plans to engage with the HEInnovate self-assessment. Each requires different levels of time and resource needs and can serve different goals. Additionally, a combination of these approaches can become useful in order to overcome the risks associated with each. For example, the Workshop Approach can be combined with the Focus Group Approach in order to make the process deeper and the results more reliable.

As demonstrated in this study, the role of the persons leading the completion of the self-assessment has a significant impact on the process. Therefore, their responsibilities and their powers should be defined in the first stage of implementing the process, and it should extend to giving them certain range of power and decision making, especially those that would enable them to extend the engagement process with the self-assessment beyond the completion of the questionnaire in the tool, and have them organize more meetings to discuss the significance of the results and suggested course of actions. Moreover, this study shows that process leaders who attended the training for trainers in Brussels demonstrated higher motivation and understanding of the HEInnovate self-assessment. Therefore, HEInnovate should continue doing such trainings and orientations, and possibly make them available on national levels, especially before conducting country reviews.

This study observes the difficulty of engaging students in the process of completing the self-assessment. One suggestion that can be worth experimenting with is including a student as one of the process leaders to engage the HEI with the self-assessment tool. This inclusion may motivate more students to engage with the process, and help disseminating information about it within the HEI.

### **6.3. Research Significance and Limitations**

The research significance lies in its potential contribution to all parties who are interested in self-assessment processes in the area of innovation and entrepreneurship. More specifically, it provides insights to the engagement of HEIs with the HEInnovate self-assessment tool. This information can aid working to have a better usage and engagement with the self-assessment tool in the future. Following the findings and the suggestions of this study can lead to an improvement of using this tool, and possibly a wider spread of its ideas and a deeper impact within HEIs that use it.

There are a number of limitations for this study. One is related to its timing which coincided with the new GDPR. The scene of engagement with the self-assessment tool would have probably been completely different if the GDPR problems did not exist. The researcher's assumption is that there would have been more concrete plans for the process, and a more "typical" scene would have occurred in Austria. Nevertheless, the research showed a wide variety of different engagement methods that can be subjected to analysis.

Another limitation can be attributed to the focus mainly on the perspective of the process leaders to paint the picture of the self-assessment process within the HEI. Even though this perspective is the most suitable and focused to answer the research questions at hand, there is a possibility of missing other important perspectives such as that of HEI leadership, teachers and professors, or other stakeholders.

#### **6.4. Recommendations for Future Research**

There are still areas to investigate in the area of engagement with self-assessment tools in the area of entrepreneurship and innovation. The sample in this research surely does not cover all the potential ways HEIs are engaging with the HEInnovate self-assessment elsewhere. Therefore, it can be worthwhile to carry a similar research to this with similar research questions in different countries and HEIs that have engaged or will soon engage with the self-assessment tool.

Another gap in that needs addressing concerns the impact of the HEInnovate on HEI that have taken it. Therefore, future studies can follow up with HEIs that have engaged with the self-assessment in previous years, and document and analyze its impact.

## References

- Arzeni, S., & Tyson, A. (2018). *Workshop training manual: A guide to delivering HEInnovate workshops* OECD & European Commission.
- Badulescu, D., Perticas, D., Hatos, R., & Csintalan, C. (2018). Students 'Entrepreneurial skills and european HEI's performance in entrepreneurship and innovation: A case study.
- Bandara, W., Chand, D. R., Chircu, A. M., Hintringer, S., Karagiannis, D., Recker, J. C., . . . Welke, R. J. (2010). Business process management education in academia: Status, challenges, and recommendations. *Communications of the Association for Information Systems*, 27, 743-776.
- Bieńkowska, E., & Moedas, C. (2017). European innovation scoreboard 2017. *European Innovation Scoreboard 2017 [Electronic Resource]*,
- BMWFW. (2016). University business forum austria. Retrieved from <http://www.ubforum-austria.eu/>
- Clark, B. R. (1998). The entrepreneurial university: Demand and response. *Tertiary Education and Management*, 4(1), 5-16.
- COM, E. C. (2012). Communication from the commission to the european parliament, the council, the european economic and social committee and the committee of the regions. *High-Performance Computing: Europe's Place in a Global Race*,
- COVA, L., & Solcan, A. (2018). The study on entrepreneurial education in the university through stakeholder involvement.
- Creswell, J. W. (2014). Research design: Qualitative, quantitative, and mixed methods approaches.
- E3M. (2010). Needs and constraints analysis of the three dimensions of third mission activities.
- ECA. (2014). Higher education system in austria. Retrieved from [http://www.ecahe.eu/w/index.php/Higher\\_education\\_system\\_in\\_Austria](http://www.ecahe.eu/w/index.php/Higher_education_system_in_Austria)
- Ecker, B., Campbell, D., Pechar, H., Reiner, C., & Welp-Park, E. (2018). *HEInnovate in austria: Background report*
- EE-HUB. (a). Entre intention tool: Measuring impact at individual level / instruments / EE-HUB / home - JAEURO. Retrieved from <http://content.ee-hub.eu/EE-HUB/Instruments/Entre-Intention-Tool-Measuring-Impact-at-Individual-level>

- EE-HUB. (b). Octoskills: Measurable entrepreneurial learning / instruments / EE-HUB / home - JAEURO. Retrieved from <http://content.ee-hub.eu/EE-HUB/Instruments/Octoskills-Measurable-Entrepreneurial-Learning>
- EFMD. (2018). *2018 EQUIS process manual* &nbsp;
- EFQM. (1999). *Information: European foundation for quality management EFQM*. Brussels:
- EFQM. (2011). *EFQM excellence model: Excellent organisations achieve and sustain superior levels of performance that meet or exceed the expectations of all their stakeholders*
- EUA. (2017). *EUA's response to the renewed EU agenda for higher education*. Brussels: European University Association asbl.
- European Commission. (2010). *Europe 2020: A strategy for smart, sustainable and inclusive growth: Communication from the commission* Publications Office of the European Union.
- European Commission. (2017). *Communication on renewed EU agenda for higher education, COM(2017) 247 final*. Luxembourg: Publications Office of the European Union.
- European Commission/EACEA/Eurydice. (2016). *Entrepreneurship education at schools in europe*. Luxembourg: Eurydice Report.
- BKA, BMF, BMUKK, BMVIT, BMWFJ und BMWF (2011). *Becoming an innovation leader: Strategy for research, technology and innovation of the austrian federal government*
- Fox, J., Pittaway, L., & Uzuegbunam, I. (2018). Simulations in entrepreneurship education: Serious games and learning through play. *Entrepreneurship Education and Pedagogy*, 1(1), 61-89.
- GEM Global Entrepreneurship Monitor. GEM global entrepreneurship monitor. Retrieved from <https://www.gemconsortium.org>
- Gibb, A., Hofer, A., & Klofsten, M. (2015). The entrepreneurial higher education institution: A review of the concept and its relevance today. *Brussels: DG Education and Culture, Accessed, 10*
- HEInnovate training package. Retrieved from <https://heinnovate.eu/>
- Henry, C. (2015). Entrepreneurship education evaluation: Revisiting storey to hunt for the heffalump. *Education Training*, 57(8/9), 816-833.
- Herrington, M., Kew, J., Kew, P., & Monitor, G. E. (2010). *Tracking entrepreneurship in south africa: A GEM perspective* Graduate School of Business, University of Cape Town South Africa.

- Hides, M. T., Davies, J., & Jackson, S. (2004a). Implementation of EFQM excellence model self-assessment in the UK higher education sector—lessons learned from other sectors. *The TQM Magazine*, 16(3), 194-201.
- Hides, M. T., Davies, J., & Jackson, S. (2004b). Implementation of EFQM excellence model self-assessment in the UK higher education sector—lessons learned from other sectors. *The TQM Magazine*, 16(3), 194-201.
- Hofer, A., & Dimitrov, G. (2015). Heinnovate reviews on promoting innovative and entrepreneurial heis country-level review bulgaria (december 2014). *Strategies for Policy in Science and Education-Strategii Na Obrazovatelna i Nauchna Politika*, 23(5), 479-492.
- Hou, B., Hong, J., Wang, H., & Zhou, C. (2018). Academia-industry collaboration, government funding and innovation efficiency in chinese industrial enterprises. *Technology Analysis & Strategic Management*, , 1-15.
- Johnson, B., & Christensen, L. (2008). *Educational research: Quantitative, qualitative, and mixed approaches* Sage.
- Jonkers, K., Tijssen, R., Karvounaraki, A., & Goenaga, X. (2017). A regional innovation impact assessment framework for universities. *Luxembourg: Publications Office of the European Union*,
- José Tarí, J. (2010a). Self-assessment processes: The importance of follow-up for success. *Quality Assurance in Education*, 18(1), 19-33.
- José Tarí, J. (2010b). Self-assessment processes: The importance of follow-up for success. *Quality Assurance in Education*, 18(1), 19-33.
- José Tarí, J., & de Juana-Espinosa, S. (2007a). EFQM model self-assessment using a questionnaire approach in university administrative services. *The TQM Magazine*, 19(6), 604-616.
- José Tarí, J., & de Juana-Espinosa, S. (2007b). EFQM model self-assessment using a questionnaire approach in university administrative services. *The TQM Magazine*, 19(6), 604-616.
- Kasperaviciute, R. (2013). Application of ISO 9001 and EFQM excellence model within higher education institutions: Practical experiences analysis. *Social Transformations in Contemporary Society*, 1, 81-92.
- Kerzner, H. R. (2014). *Project management : Best practices - achieving global excellence*. Somerset: John Wiley & Sons, Incorporated. Retrieved from <http://ebookcentral.proquest.com/lib/tampere/detail.action?docID=1598007>



- Klapper, R. (2004). Government goals and entrepreneurship education—an investigation at a grande ecole in france. *Education Training*, 46(3), 127-137.
- Labuschagne, C., & Brent, A. C. (2005). Sustainable project life cycle management: The need to integrate life cycles in the manufacturing sector. *International Journal of Project Management*, 23(2), 159-168.
- Lambert, R. (2003). Lambert review of business-industry collaboration. *Norwich, UK: HMSO*,
- Leybourne, S. A., & Sainter, P. (2012). Advancing project management: Authenticating the shift from process to “Nuanced” Project-Based management in the ambidextrous organization. *Project Management Journal*, 43(6), 5-15.
- Lindstrom, P., & Word, W. R. (2007). Accreditation of european management schools: The equis system. *Palmetto Review*, 10
- Lüthje, C., & Franke, N. (2003). The ‘making’ of an entrepreneur: Testing a model of entrepreneurial intent among engineering students at MIT. *R&d Management*, 33(2), 135-147.
- Montesinos, P., Carot, J. M., Martinez, J., & Mora, F. (2008). Third mission ranking for world class universities: Beyond teaching and research. *Higher Education in Europe*, 33(2-3), 259-271.
- Morse, J. M. (1991). Approaches to qualitative-quantitative methodological triangulation. *Nursing Research*, 40(2), 120-123.
- Myryläinen, H. (2017). Measuring the promise of innovation in the higher education. *UPDATE 2017 ON HIGHER EDUCATION International Week 25.-29.9.2017*, , 48.
- Nabi, G., Liñán, F., Fayolle, A., Krueger, N., & Walmsley, A. (2017). The impact of entrepreneurship education in higher education: A systematic review and research agenda. *Academy of Management Learning & Education*, 16(2), 277-299.
- Oakey, R. P., Mukhtar, S., & Kipling, M. (2002). Student perspectives on entrepreneurship: Observations on their propensity for entrepreneurial behaviour. *International Journal of Entrepreneurship and Innovation Management*, 2(4-5), 308-322.
- OECD. (2017a). *Supporting entrepreneurship and innovation in higher education in hungary*. Paris: OECD Publishing. Retrieved from <http://www.econis.eu/PPNSET?PPN=1009604678>
- OECD. (2017b). *Supporting entrepreneurship and innovation in higher education in poland*. Paris: OECD Publishing. Retrieved from <http://www.econis.eu/PPNSET?PPN=1007304499>

- OECD. (2018). Applying HEInnovate to higher education in the netherlands. *Supporting entrepreneurship and innovation in higher education in the netherlands* (pp. 49-81). Paris: OECD Publishing.  
doi:10.1787/9789264292048-8-en Retrieved from <http://dx.doi.org/10.1787/9789264292048-8-en>
- OECD Publishing. (2017). *Supporting entrepreneurship and innovation in higher education in ireland*. Paris: Organization for Economic Cooperation and Development. Retrieved from [https://ebookcentral.proquest.com/lib/\[SITE\\_ID\]/detail.action?docID=5111154](https://ebookcentral.proquest.com/lib/[SITE_ID]/detail.action?docID=5111154)
- Paloma Sánchez, M., Elena, S., & Castrillo, R. (2009). Intellectual capital dynamics in universities: A reporting model. *Journal of Intellectual Capital*, 10(2), 307-324.
- Papa, B., & Demo, E. (2018). Universities and entrepreneurship: An overview of albanian public HEI-s on entrepreneurial university model aspects. *Academic Journal of Interdisciplinary Studies*, 7(2), 107-115.
- Parker, L. (2011). University corporatisation: Driving redefinition. *Critical Perspectives on Accounting*, 22(4), 434-450.
- Pinto, J. K., & Prescott, J. E. (1988). Variations in critical success factors over the stages in the project life cycle. *Journal of Management*, 14(1), 5-18.
- Pittaway, L., & Cope, J. (2007). Entrepreneurship education: A systematic review of the evidence. *International Small Business Journal*, 25(5), 479-510.
- Pittaway, L., & Edwards, C. (2012). Assessment: Examining practice in entrepreneurship education. *Education Training*, 54(8/9), 778-800.
- Ruskovaara, E., Pihkala, T., & Oy, A. (2016). Review, comparison and evaluation of seven assessment tools. *European Entrepreneurship Education NETwork*,
- Ruskovaara, E., Pihkala, T., Seikkula-Leino, J., & Rytkölä, T. (2015). Creating a measurement tool for entrepreneurship education: A participatory development approach. *Developing, Shaping and Growing Entrepreneurship*, , 40-57.
- Secundo, G., Perez, S. E., Martinaitis, Ž, & Leitner, K. H. (2017). An intellectual capital framework to measure universities' third mission activities. *Technological Forecasting and Social Change*, 123, 229-239.
- Sjoer, E., Nørgaard, B., & Goossens, M. (2016). From concept to reality in implementing the knowledge triangle. *European Journal of Engineering Education*, 41(3), 353-368.
- Somers, T. M., & Nelson, K. G. (2004). A taxonomy of players and activities across the ERP project life cycle. *Information & Management*, 41(3), 257-278.

Sultan, S. (2017). Moving from a traditional into an entrepreneurial university: Evidencing from palestine.

Thamhain, H. J. (2014). *Managing technology-based projects : Tools, techniques, people and business processes*. New York: John Wiley & Sons, Incorporated. Retrieved from <http://ebookcentral.proquest.com/lib/tampere/detail.action?docID=1651765>

Wang, C. K., & Wong, P. (2004). Entrepreneurial interest of university students in singapore. *Technovation*, 24(2), 163-172.

Webster Dictionary. (2018). Project - definition of project by webster dictionary&nbsp; Retrieved from <http://www.webster-dictionary.net/>

Wenninger, H. E. (2018). Student assessment of venture creation courses in entrepreneurship higher Education—An interdisciplinary literature review and practical case analysis. *Entrepreneurship Education and Pedagogy*,

Widhiani, A. P., & Fauzi, A. M. (2016). Entrepreneurial transformation and university leadership in indonesia. Paper presented at the *International Conference on Enterprise Marketing and Globalization (EMG)*. *Proceedings*, 112.

## **Appendix A**

### **1. Interview Guide for HEIs that Engaged with HEInnovate Self-Assessment Tool**

*The process of completing the self-assessment tool:*

1. Who was selected to be involved in the process of completing the assessment? How and why were they chosen?
2. What actions did you take to complete the assessment?
3. How long did the process take you?
4. Overall, did you find the process was clear or were there any challenges?
5. Why have you chosen to use this tool?
6. If you weren't one of the universities participating in this country review, and were to fill in this self-assessment tool, would you have done it differently?

*Learning form the exercise of completing the self-assessment tool:*

7. Did this exercise help reveal areas of organizational strength and/or challenges, and identify areas of improvement? Can you elaborate and/or give an example?
8. Did it encourage information sharing among different departments in the university? Can you elaborate/give an example? If yes, do you think that it added value to the institution?
9. If you were to summarize the most prominent takeaways from this assessment, what would you say?
10. On a scale from 1 to 10 (one being the lowest, and 10 the highest), how valuable do you think this exercise was? Can you explain your rating?
11. Is there anything that you would like to add that I may have missed in this interview?
12. Is there anyone else whom I should contact who can contribute to this study?

## **2. Interview Guide for HEIs that Did not Engage with HEInnovate Self-Assessment**

*The Process of preparing for the country review:*

1. What is your role in the university?
2. When did you hear about HEInnovate, and how were you involved?
3. In the current HEInnovate country review, it was highly encouraged to use the online tool to prepare for it. Have you considered using it in the beginning? Why (not)?
4. What made you decide not to use the online tool?
5. What was your motivation to participate in the country review?
6. How did you prepare for the country review (step by step from December/January till June)
7. What were the areas you focused on when you were preparing for the review (what were your dimensions equivalent?)
8. How did you gather the information? Whom did you involve?
9. Was this a regular practice done before, or did you create it for the country review? Would you use/incorporate this process again in the future?
10. How long did it take? Was the timeframe for preparing for the country review sufficient?

*Learning from the exercise of preparing for the country review:*

11. Did this process encourage information sharing among different departments in the university? Can you elaborate/give examples? If yes, do you think that it added value to the institution?
12. Did this exercise reveal areas of strengths and or/challenges? Can you give examples?
13. On a scale from 1-10 (one being the lowest, and 10 the highest), how valuable do you think this exercise was? Can you explain your rating?
14. Is there anything you would like to add that I may have missed in the interview?
15. Is there anyone else whom I should contact who can contribute this study?